

Road Safety Trust: Bannerman Road

Technical Report



14 March 2022

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Executive summary

Background

Safety is a significant issue on UK roads and a barrier to encouraging higher levels of walking and cycling, particularly for children travelling to school. In 2015, 40% of incidents involving children occurred in the morning or evening of a school day (Department for Transport, 2016).

The closure to traffic of streets around schools is becoming an increasingly common intervention used by local authorities across the country. These closures can be either permanent or timed to meet morning and afternoon drop off and pick up. It is hoped that restriction of access to cars around the immediate vicinity of a school will discourage the high volumes of vehicles typically experienced at the start and end of the school day. The broad objective of such a road closure is to create a safer environment that will in turn encourage higher levels of walking and cycling.

Despite the potential benefits of restricting traffic around schools, road closures are often seen as contentious within local communities. The approach is considered as just moving congestion to other parts of an area, causing an inconvenience to local journeys.

In 2017, Bristol City Council identified a road junction in the Bristol neighbourhood of Easton to be closed to vehicles. A parent and teacher group, Friends of Bannerman Road, were commissioned by the Road Safety Trust to deliver a community design process with the aim of engaging the school and local community in creating a new pedestrian space around the closed junction. Sustrans were commissioned to evaluate several aspects and potential impacts of the road closure and associated co-design project.

This report investigates the impact of the closure of the junction between All Hallows Road and Albion Road, focussing on comparative changes in several behaviours associated with the closure. This includes potential traffic displacement, road safety impacts such as changes in traffic speeds and volumes, changes in walking and cycling to and from the school and the changing perceptions and levels of support for the road closure.

Methodology

The roads around Bannerman Road Community Academy were monitored at baseline in 2019 and post-intervention in 2021 to observe changes in traffic behaviours and pedestrian flows. The data analysis has focussed on peak travel times associated with the school, broadly 8am to 9am and 3pm to 4pm, however data was collected throughout the day. Automated Traffic Counts collected traffic speed and volume data 24hrs a day over a seven-day period. Artificial Intelligence (AI) Video technology was used to collect traffic speeds and volumes as well as pedestrian and cycle count data. Surveys collected by the Friends of Bannerman Road Group and through the survey platform, Survey Monkey, captured changing perceptions relating to safety, support for the closure and empowerment. These data collection methods were used to assess the road safety characteristics in the table below.

Table 1: Data collection methods used before and after implementation of light touch road safety measures.

Data collection method	Safety characteristics assessed
Automatic Traffic Counts (ATCs)	Vehicle speed Traffic volume
Artificial Intelligence (AI) video monitoring	Vehicle speed Traffic volume Pedestrian flow and volume Cycle flow and volume Pedestrian movement tracking
Perception surveys	Feelings of safety Support for the road closure Propensity to walk or cycle

Table 2: Dates pre- and post- intervention monitoring methods were completed at each site.

	Pre intervention (2019)	Post intervention (2021)
Automatic traffic counts (ATCs)	24 th – 28 th June	24 th – 28 th May
Video monitoring	19 th – 20 th June	25 th – 26 th May
Perception survey	June – July	June - August

Findings

Has traffic been displaced to other streets around the school as a result of closing the junction between Bannerman Road and All Hallows Road?

Traffic displacement was recorded at two of the school approaches, with combined AM and PM school time traffic increases of 36% (23 cars) on Chaplin Road, and 25% (20 cars) on Normanby Road. However, average traffic flows at school peak times across all 5 roads monitored saw a reduction in traffic of 44% (327 cars). All Hallows Road saw school peak traffic volume (8am to 9am and 3pm to 4pm combined) reduced by 94%, from 243 vehicles to 20 vehicles.

The 2021 follow up survey recorded a 31percentage point drop in sentiment that ‘the surrounding streets are congested’.

Does the new junction closure represent an improvement in road safety?

Along All Hallows Road, the main approach to the school, traffic speeds reduced by 45% to 8MPH (85th percentile) and school peak traffic volume reduced by 92% from 243 vehicles to 20 vehicles.

On Albion Road, vehicle speeds were recorded to have increased slightly from 12MPH to 14MPH (85th percentile), but school peak traffic volume reduced by 45% from 254 vehicles to 140 vehicles.

Following the junction closure, pedestrians appeared to be commonly using the whole of the carriage way between Frog Marsh and the school entrance. Previously, pedestrian movements remained almost exclusively within the footways.

Video monitoring of the junction closure on Albion Road provided evidence of increased informal crossing movements across a wider section of the road rather than being constrained to the crossing points.

Perceptions of All Hallows Road have changed with a 51 percentage point increase in respondents now agreeing that the closure has made the road safer.

Have levels of walking and cycling to the school increased as a result of the road closure?

Total recorded footfall across all three sites, both at school peak times and across the 12hr recorded period, remained largely unchanged. There was a 2% increase in the two day average of pedestrians (from 940 to 962 trips) at school peak times and a 3% increase in the two day average across the recorded 12hr period (from 2691 to 2776 trips).

However, the introduction of a pedestrian one-way entrance and exit system at the school, appears to have created changes to movement patterns in and around the school, making it difficult to directly compare base line and follow up movement. Whereas parents were previously able to choose which entrances and exits they would use, as a result of the school's COVID-19 social distancing policy, parents are now required to enter from at the north of the site and leave from the south. As movement around the southern exit points was not captured, this is likely to have resulted in a number of trips not being recorded at the camera recording locations.

Recorded footfall on Bannerman Road, under Frog Marsh Bridge and around the school gate decreased by 16% at school peak times (from 440 to 371 trips). Across the 12hr recorded period, footfall under Frog Marsh bridge saw a decrease of 13% (132 trips).

Along All Hallows Road, a 10% increase (from 229 to 251 trips) in footfall at school pick up and drop off times was recorded. Across the 12hr recorded period however, footfall along All Hallows Road saw a 9% decrease (from 816 to 746 trips).

Albion Road saw a rise in footfall with a 25% increase (from 272 to 341 trips) at peak school times and an increase of 34% (from 840 to 1127 trips) recorded across the 12hr recorded period.

Cycle trips across all three camera locations saw decreases both at school peak times and across the 12hr recording period. The average two day number of cycle trips at school peak times fell by 24% (from 103 to 78 trips) and the total across the 12hr period fell by 25% (from 469 to 350 trips).

The biggest change in cycle trip patterns was at the AM peak between 8am and 9am along Albion Road, which may be associated with a reduction in morning commuters, rather than

journeys to the school. AM and PM school peaks along Bannerman Road and All Hallows Road are broadly unchanged.

Trips on Bannerman Road under the Frog Marsh bridge saw an 8% drop (from 20 to 18 trips) at school peak times and a 15% drop (from 91 to 77 trips) across the day.

Trips along All Hallows Road followed a similar trend, but with an 8% increase at school peak time (from 20 to 22 trips) but a 16% drop across the day (from 113 to 95 trips).

Cycle trips along Albion Road recorded a 40% reduction at school peak times (from 63 to 38 trips) and a 33% reduction across the day (from 266 to 178 trips).

Base line and follow up monitoring across all three sites followed similar travel patterns, with the most notable hourly change being a 46% (21 trips) drop in trips along Albion Road between 8am and 9am.

Sentiment captured through the follow up perception surveys evidenced a 29 percentage point increase in the number of people saying they would now walk to Bannerman Road Community Academy.

How have public perceptions and sentiment related to the road closure changed following construction?

Evidence suggests that public support for the closure has increased, with the follow up perception surveys showing a 15 percentage point increase in respondents supporting the permanent closure of the junction.

As discussed, it is important to note that changes may have been impacted by other external factors influencing behaviour, walking, cycling and traffic levels, particularly the COVID-19 pandemic.

Conclusions

Being mindful of the potential impacts that the COVID-19 pandemic may have had on travel behaviour at the time of follow up data collection, findings of our evaluation suggest that:

- Some traffic displacement has occurred as a result of the junction closure; however, this appears to be offset by the overall reduction in traffic recorded during the period since the junction closure.

- Road safety has improved at the area around the junction closure, with lower traffic volumes, reductions in traffic speeds, more informal crossing behaviours and an increase in sentiment that All Hallows Road is now safer for walking and cycling.
- There is also a 29 percentage point increase in people saying they would now walk to the Bannerman Road Community Academy. This is not supported by the numbers of pedestrians recorded during follow up data capture, with the two day average number of pedestrians remaining broadly the same. Walking and cycling trips under Frog Marsh bridge have been evidenced to have fallen between base line and follow up data capture. However, the impact of COVID-19, particularly changes to entry and exit points within the school site, make it difficult to directly compare base line and follow up data sets for pedestrians around the school. Higher levels of home working may also have impacted particularly on the number of cyclists.
- Follow up perception surveys suggest a high level of support for the junction closure with 79% of respondents now supporting the closure and 10% not supporting the closure. This has changed from a base line level of 64% support and 25% opposition.

There is a question about the impact and the value of delivering this intervention through a co-design process. Enthusiasm for the design (although still very strong) and sentiment that resident input is of importance would appear to have reduced since 2019.

The evidence presented within this study suggests that further research considering a wide range of behaviours would be beneficial to better understand the impacts of junction closures within residential neighbourhoods. Further research would also benefit our understanding of the value and impacts of delivering projects using co-design methods, as well as the value of place-making within the highway context. Data collection could be improved by monitoring more streets in the surrounding area and using control sites for comparison.

1. Introduction

The objective of this project is to evaluate a number of aspects and impacts of a road closure and the associated co-design project outside of Bannerman Road Community Academy in Easton, Bristol.

1.1 Background

In 2016/17, Sustrans and Bristol City Council worked with residents of Easton with the aim of encouraging more walking and cycling by increasing street safety. This community-led process gathered the views of people living and working in the area using an online survey and on-street events. People were asked to identify barriers to active travel and opportunities for road safety improvements in the area.

A number of improvement measures throughout the neighbourhood were identified, including filtered road closures. Filtered closures prevent traffic passing but allow pedestrians and cyclists through. However, as a result of community objections during the formal consultation period, the only closure to be installed was one between All Hallows Road and Albion Road.

Following award of funding from the Road Safety Trust in 2017, parent and teacher group, Friends of Bannerman Road, commissioned the multidisciplinary designer Bahbak Hashemi-Nezhad's studio to reimagine the space created as a result of the road closure. Based on a local popular vote the underpass was renamed Frog Marsh, a historical name for the area of Easton to which the intervention is located. Building on the existing engagement, the studio collaborated with Bannerman Road Community Academy students to design a playful and functional scheme to address pedestrian safety and to support active travel modal shift. In 2019, the junction was closed to traffic and construction was completed.

Figure 1: Photos of intervention before and after¹



¹ Photo Credit: Bahbak Hashemi-Nezhad

Figure 2: Contextual overview of site



1.2 Research aims

This report provides a descriptive, contextual overview of the potential impacts resulting from the closure of Frog Marsh. The impacts are multifaceted, as they would be with any considerable change to a community's environment. Furthermore, the COVID-19 pandemic significantly altered everyday mobility and travel behaviours since 2020. Many of the lasting impacts on travel behaviours are still with us in 2021. The project broadly attempted to review the following questions:

- Would traffic be displaced to other streets around the school as a result of closing the junction?

- Does the junction closure represent an improvement to road safety?
- Have levels of walking and cycling to the school increased as a result of the road closure?
- How has public perceptions and sentiment towards the road closure changed following construction?

1.3 Methodology

The research captured traffic data at a number of streets adjoining, or close to, Bannerman Road Community Academy in Bristol over a two year period. Automated Traffic Counts (ATCs) captured traffic speed and volume at a number of streets. Artificial Intelligence (AI) video captured traffic speed and volume as well as pedestrian and cycle flows at the road closure points.

The roads around Bannerman Road Community Academy were monitored at baseline in 2019 and post-intervention in 2021 to observe changes in traffic behaviours and pedestrian flows. The data analysis has focussed on peak travel times associated with the school, broadly 8am to 9am and 3pm to 4pm, however data was collected throughout the day. ATCs collected traffic speed and volume data 24hrs a day over a seven day period. AI Video technology was used to collect traffic speeds and volumes as well as pedestrian and cycle count data over a two day period. Surveys collected by the Friends of Bannerman Road group and through the survey platform, Survey Monkey, captured changing perceptions relating to safety, support for the closure and empowerment. The following data collection methods were used to assess the road safety characteristics set out in the table below.

Table 3: Data collection methods used before and after implementation of light touch road safety measures.

Data collection method	Safety characteristics assessed
Automatic traffic counts (ATCs)	Vehicle speed Traffic volume
Artificial Intelligence (AI) video monitoring	Vehicle speed Traffic volume Pedestrian flow and volume Cycle flow and volume
Perception surveys	Feelings of safety

Support for the road closure Propensity to walk or cycle

Table 4: Dates pre- and post- intervention monitoring methods were completed at each site.

	Pre intervention (2019)	Post intervention (2021)
Automatic traffic counts (ATCs)	24 th – 28 th June	24 th – 28 th May
Video monitoring	19 rd – 20 th June	25 th – 26 th May
Perception survey	June – July	June - August

1.4 Structure of the report

This report is split into seven sections: section two outlines the physical works and co-design process; section three describes the methodology; section four provides the results against research aims and monitoring tools (ATCs, AI video and perception surveys); section five analyses the results and considers the wider road safety context; section six presents key findings and recommendations and section seven lessons learned.

2. Intervention overview

2.1 Intervention aims

Following an engagement process, the junction under the railway bridge connecting All Hallows Road and Albion Road was highlighted as a potential location for closure. The broad aims were to create a safer environment for walking and cycling (particularly relating to access to the school), by reducing traffic volumes in the immediate vicinity, to encourage increased numbers of active journeys by parents and students

While the project aimed to tackle the mobility challenges identified, it also provided an opportunity to enhance the area's amenity value through place-making.

2.2 Design delivery and physical output

The design of the intervention was facilitated by London based multidisciplinary designer Bahbak Hashemi-Nezhad. Working collaboratively with students, teachers, and parents from the school, Bahbak Hashemi-Nezhad built upon an earlier consultation to deliver a design that would address road safety issues and strive to create a new public space through the closure to enhance place making and social cohesion. Consisting of several playful elements drawn together by an overlying colour palette, the primary component of the design was to act as a modal filter between All Hallows Road and Albion Road. Components of the new design included:

- Ground surface treatment of the new corridor, highlighted through matching the light blue colour of a nearby household.
- A 'museum' of bespoke orange columns to restrict traffic through the junction.
- Street furniture similarly painted blue.

- A renaming of the area chosen by residents and painted over the junction matching the orange of the bollards.
-

2.3 Area context

2.3.1 Location / Physical character

The intervention is located in Easton, an inner-city area of Bristol. Easton is mainly residential and built up of terraced houses on narrow streets. In direct proximity to the closed junction is the primary school and nursery, Bannerman Road Community Academy. All Hallows Road runs along the eastern border of the school connecting to Albion Road underneath a rail bridge before opening out onto a small, local, green space. Underneath this bridge is where the closure is located, as shown in Figure 2 (above).

Figure 3: Location of intervention



2.3.2 Traffic issues / problems

Consulting with Easton's residents and the Bannerman Road Community Academy, Sustrans and Bristol City Council gathered a body of information concerning urban environmental challenges throughout Easton. The engagement identified several junctions that were highlighted for improvement to create safe, traffic-calmed routes through the area. The broad issues that the neighbourhood faced were:

- Speeding and dangerous driving behaviour.
- Key routes to school with high numbers of children and families at peak times on busy roads.
- Poor and difficult crossings.

- Narrow pavements, especially for pushchairs.
- Rat running/ through traffic.
- Albion Green identified as a positive and well used facility by the community.

The junction at the intersection of Albion Road and All Hallows Road, close to the entrance to Bannerman Road Community Academy, was identified as a priority location that would offer significant benefits to being closed to through traffic.

3. Methodology

3.1 Objectives

The primary monitoring objectives were to answer the following research questions:

- Have traffic flows and speeds significantly changed following the closure of the junction?
 - Does the closure of the junction, crossing points and improved public realm represent an improvement in road safety?
 - Do levels of walking and cycling related to the school run increase as a result of the junction closure?
 - Do levels of objection to junction closures change over time as a result of experiencing road safety improvements and public realm benefits?
-

3.2 Methods of data capture

3.2.1 Data collection times

Following the commissioning of the project, there was a small window available to capture base line data between summer closure of the school and installation of the road closure during the summer holidays. For that reason, base line data was collected in June of 2019.

The original programme had planned follow up collection a year later, to be seasonally similar and provide time for behaviour to adjust to the changes. Closure of the school during the original lockdown of 2020 meant that although the school may have been operating during May and June 2020, it is likely that operation would be at a limited capacity and that social behaviour is likely to have seen significant changes. For that reason, it was determined that an additional year assuming the school was operating normally and to allow behaviours to normalise to something similar to pre-lockdown, with follow-up collection during May or June 2021 would provide a more comparable data set.

3.2.2 Artificial Intelligence (AI) Cameras

Several cameras were set up in direct proximity to the 'point closure' near Bannerman Road Community Academy, capturing movements of vehicles, pedestrians and cyclists at key agreed locations:

- Albion Road
- Bannerman Road (capturing movements entering and leaving the bridge)
- All Hallows Road

The locations were chosen as appropriate for capturing a number of movements relating directly to the road closure in terms of traffic movements around the periphery of the school, as well as the pedestrian approaches to the school entrance on Bannerman Road.

Cameras captured data over a two-day period, between the hours of 7am to 7pm.

The recording days for baseline data were: 19/06/2019 & 20/06/2019. The recording days for follow-up data were: 25/05/2021 & 26/05/2021.

Cameras captured the volume of vehicles, pedestrians and cyclists on an hourly basis. They also captured the speed of vehicles (cars, vans and trucks), presented in this study as the 85th percentile speed and mean average speed recorded over a period of a day (from 7am to 7pm).

AI cameras capture data by placing a line across the camera view at a given location and counting movement across that line in both directions. Similar to the use of pneumatic tubes used with Automatic Traffic Counts. Movement was captured on the approach to the school along All Hallows Road, through Frog Marsh bridge on Bannerman Road and on the approach to the bridge along Albion Road.

The use of artificial intelligence software allowed the filtering of modal types into vehicle traffic, pedestrian movement and cycle movement. Using this filtered data, the software in these cameras is then able to produce filtered images of pedestrian, cycle and vehicle movement tracks and hotspots.

A detailed analysis of traffic flow (volume of vehicles) and pedestrian and cycle movements was carried out for each camera location.

Data captured by the cameras is considered in terms of single and bi-directional flows, as well as averaged two day counts as appropriate for understanding movement in any specific location and relationship to other data sets. Data is clearly labelled to reflect each set.

The traffic flow figures of each category represents two-way traffic.

3.2.2.1 Weather at time of AI data capture

On all four data capture dates, the weather was dry with sunny intervals. Temperature ranges in May were colder than those in June, see Figures 4 and 5.

Weather at the time of the base line and follow up AI data capture was broadly similar on 26th May 2021, 19th and 20th June 2019 with midday low and high temperature ranges between 12°C and 17°C. The temperature range on 25th May was marginally colder with low and high ranges between 9°C and 12°C.

Figure 4: Weather at time of base line AI video capture – timeanddate.com

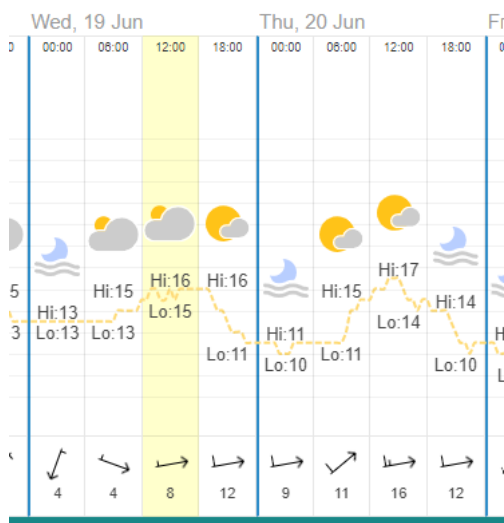
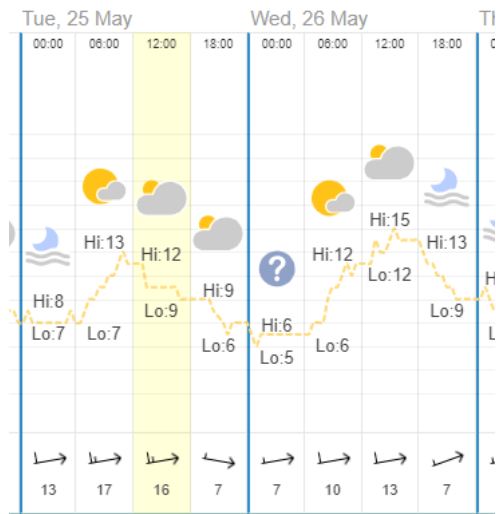


Figure 5: Weather at time of follow up AI video capture – timeanddate.com



3.2.3 Automated Traffic Count (ATC)

Three sets of Automated Traffic Counters (ATCs) were installed to measure both speed and the number of vehicle movements in the vicinity of Bannerman Road Community Academy. These locations were:

- Chaplin Road
- Normanby Road
- Graham Road

The counters captured data over a period of seven days, for a period of 24 hours each day. For the purpose of understanding traffic safety in relation to the school this report will focus on the five day school/working week (Monday to Friday).

The recording days for baseline data were: 24/06/2019 to 28/06/2019. The recording days for follow-up data were: 24/05/2021 to 28/05/2021.

A detailed analysis of vehicle flow and speed for each location was carried out comparing baseline and follow-up data. Figures compared were:

- 5 day mean vehicle flow figures
- 5 day hourly vehicle flow figures
- 5 day 85th percentile speed

3.2.3.1 Weather at time of ATC data capture

Figure 6: Weather at time of base line ATC data capture – timeanddate.com

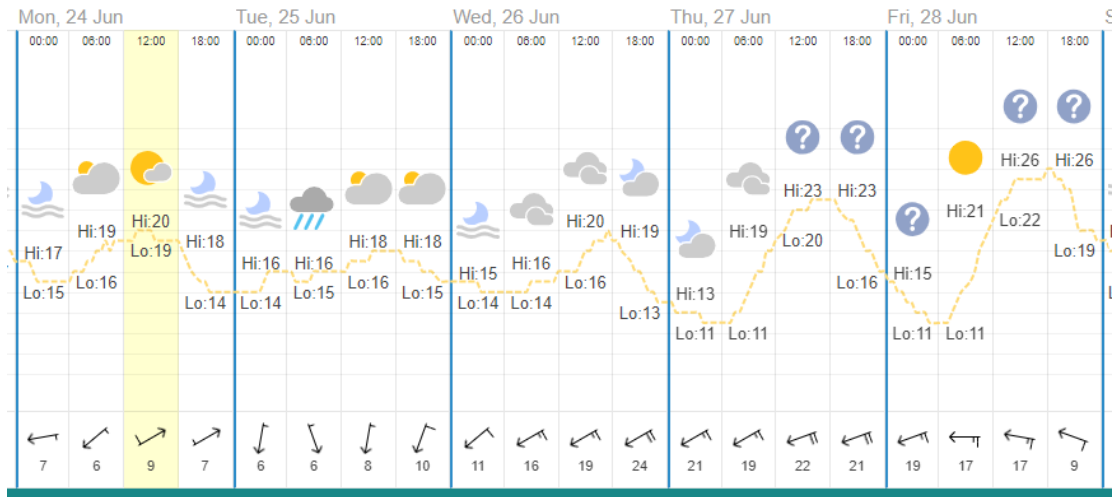
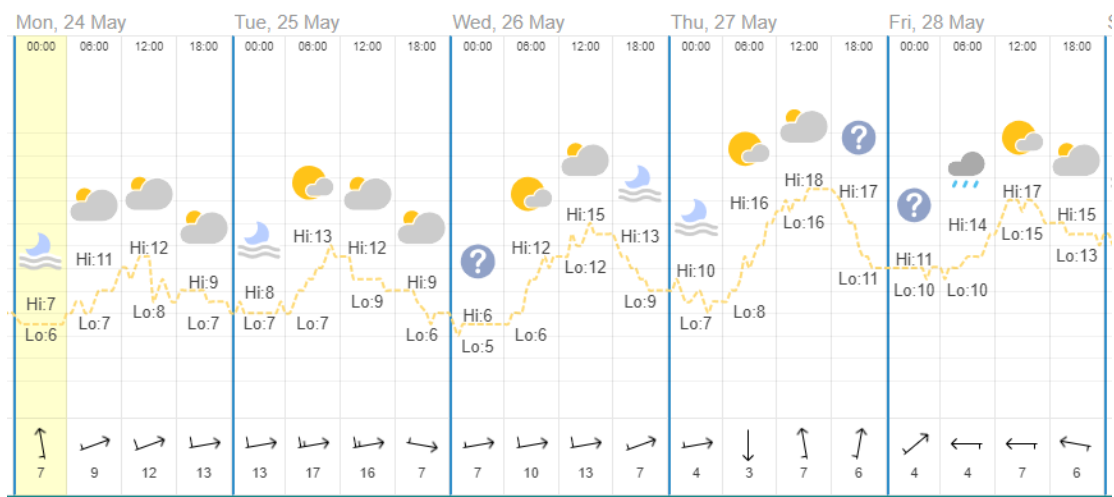


Figure 7: Weather at time of base line ATC data capture – timeanddate.com



3.2.4 Perception Surveys

Over the course of the project surveys were distributed to local residents to monitor how the junction closure and its effects were perceived. Survey data was collected to understand the

perceived effects of the closure on the surrounding area. The data aimed to build an understanding of how the community of Easton has broadly responded to the intervention.

Surveys were provided in both paper form and using the on-line platform, Survey Monkey. Base line surveys were distributed between the months of June and July in 2019, and follow-up surveys were distributed between June and August in 2021. There were some phrasing differences between the paper and on-line surveys. An example of this would be “Do you think All Hallows Road is currently safe for walking or cycling?” compared to “Do you think All Hallows Road is safe for walking and cycling?” The differences in the questions are minor, so for the purpose of this report the responses given have been collated into a single set of data.

It should be noted that some of the follow up surveys were collected during August 2021 during the summer holidays. Most were collected during school term time. The degree to which this might influence participants level of sentiment, for example if their child moving from primary to secondary education, is unclear. An objective of the study, however, is to capture a broad view from the local community as to the level of support for the closure.

3.3 Overview of monitored area (site)

Figure 8: Overview of ATC capture locations

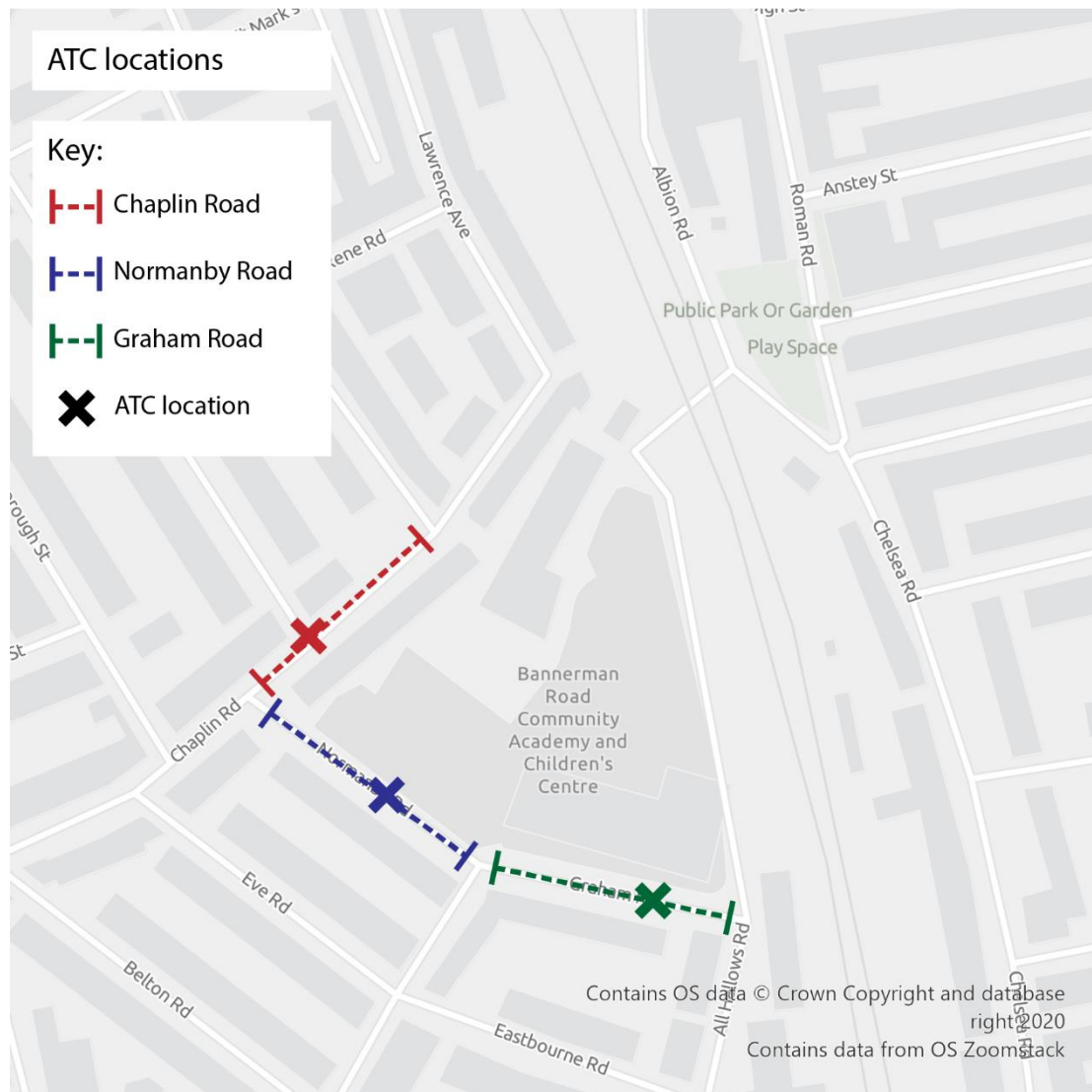
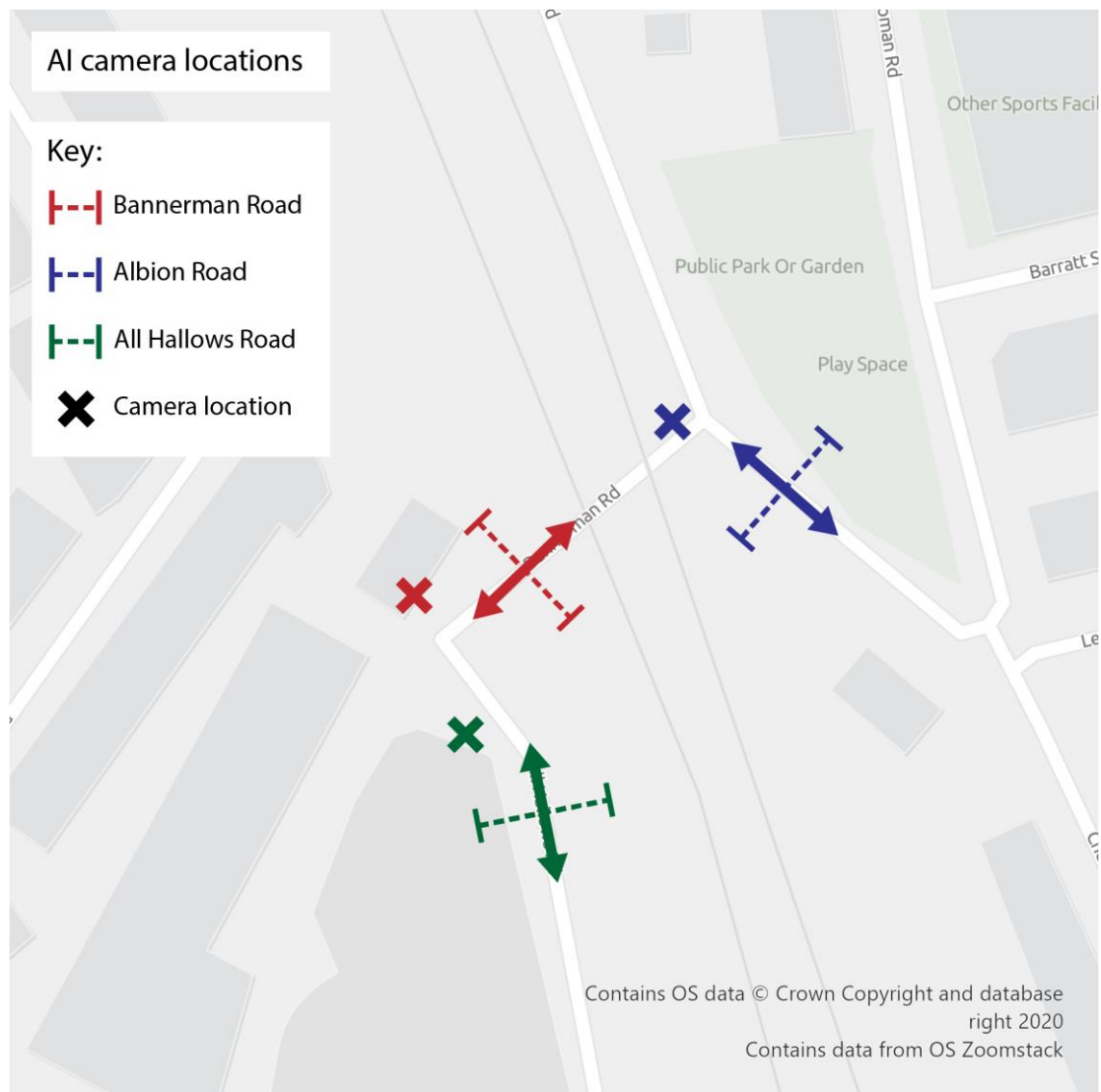


Figure 9: Overview of video capture locations



3.4 Survey data overview and demographics

3.4.1 Response by Gender

Most of the respondents to the surveys were female. In 2019, a total of 88 out of 102 (86%) out of those who responded identified as female. In 2021, 37% of respondents were male and 62% were female.

Table 5: Gender demographics of collected surveys

Gender:	2019 Baseline (Total)	2019 Baseline (%)	2021 Follow up (Total)	2021 Follow up (%)
Female	88	86%	115	62%
Male	14	14%	68	37%
Prefer not to say	0	0%	2	1%

3.4.2 Response by Age

The majority of respondents completing the survey were between the ages of 25 – 44. In 2019, a total of 88 out of 112 (78%) were within this bracket. When asked again in 2021, there was more distribution amongst age groups. However, the number of individuals between the ages of 25 – 44 remained the largest majority of respondents, making up 68% of the total responses.

Table 6: Age demographics of collected surveys

Age:	2019 Baseline (Total)	2019 Baseline (%)	2021 Follow up (Total)	2021 Follow up (%)
16-24	5	4%	20	11%
25-34	36	32%	70	37%
35-44	52	46%	59	31%
45-54	14	13%	26	14%
55-64	4	4%	11	6%
65+	1	1%	3	2%

3.4.3 Response by Ethnicity

Comparing the survey responses to the data from the 2011 Census for Easton (Bristol City Council, 2021), overall, black and minority ethnic groups were proportionally represented in both surveys in the responses gathered. Comparably, those identifying as white British responded less than their proportional representation in Easton.

Table 7: Ethnic group demographics of collected surveys

Ethnic group:	2011 Census	2019 Baseline (Total)	2019 Baseline (%)	2021 Follow up (Total)	2021 Follow up (%)
White other	10%	14	18%	25	18%
White British	53%	21	26%	28	20%
Mix/Multiple	7%	8	10%	8	6%
Black or Black British	16%	15	19%	40	28%
Other	2%	2	3%	3	2%
Asian or Asian British	14%	10	13%	31	22%
Prefer not to say	N/A	10	13%	7	5%

3.4.4 Response by Relationship to the Area

Parents/Carers made up the majority of respondents both in 2019 and again in 2021. 52% of respondents' relationship to the area was that they were Parents/Carers. This number decreased slightly in 2021 to 46%. The second-largest category chosen was "resident of the area", with 37% of the respondents selecting the category in 2019 and 43% in 2021. In 2021 there was a slight uptake in students who responded to the survey. These students were in further education and not of Bannerman Community Academy.

Table 8: Ethnic group demographics of collected surveys

Relationship to the area:	2019 Baseline (Total)	2019 Baseline (%)	2021 Follow up (Total)	2021 Follow up (%)
Resident of the area	42	37%	87	43%
Parent/Carer	59	52%	81	46%
Member of staff	6	5%	4	4%
Student	0	0%	5	3%
Other	6	5%	8	4%

4. Evidence

4.1 Traffic displacement

4.1.1 Objective

To understand if the closure of the junction of All Hallows Road and Albion Road has resulted in any traffic displacement to other areas around the school.

Despite the potential benefits of restricting traffic around schools, road closures are often seen as contentious within local communities and even by local authority highways departments, who consider the approach as potentially moving congestion to other parts of an area rather than actually addressing a traffic issue.

Bannerman Road Community Academy has a number of streets adjoining its perimeter. As it is now not possible for vehicles to approach via the railway bridge, drivers may be encouraged to use other streets approaching the school. Traffic was measured on five streets directly around the school at base line and then follow up to provide a comparative set of traffic flow data.

Perception surveys also captured changes in sentiment relating to congestion in the streets around the school.

4.1.2 Metrics

- Measure changing vehicle volumes/ flows at several locations around the perimeter of the school.

ATCs and AI video were used on the key streets around the school, to record changes in traffic volumes between base line and following the junction closure.

- Measure sentiment to changing vehicle volumes/flows as a result of the road junction closure. Evaluate the perception that traffic in surrounding streets has increased since the implementation of the junction closure.

Base line and follow up perception surveys included a question asking participants if they agreed with the statement, “The surrounding streets are congested”.

4.1.3 ATC Analysis – Chaplin Road, Normanby Road and Graham Road.

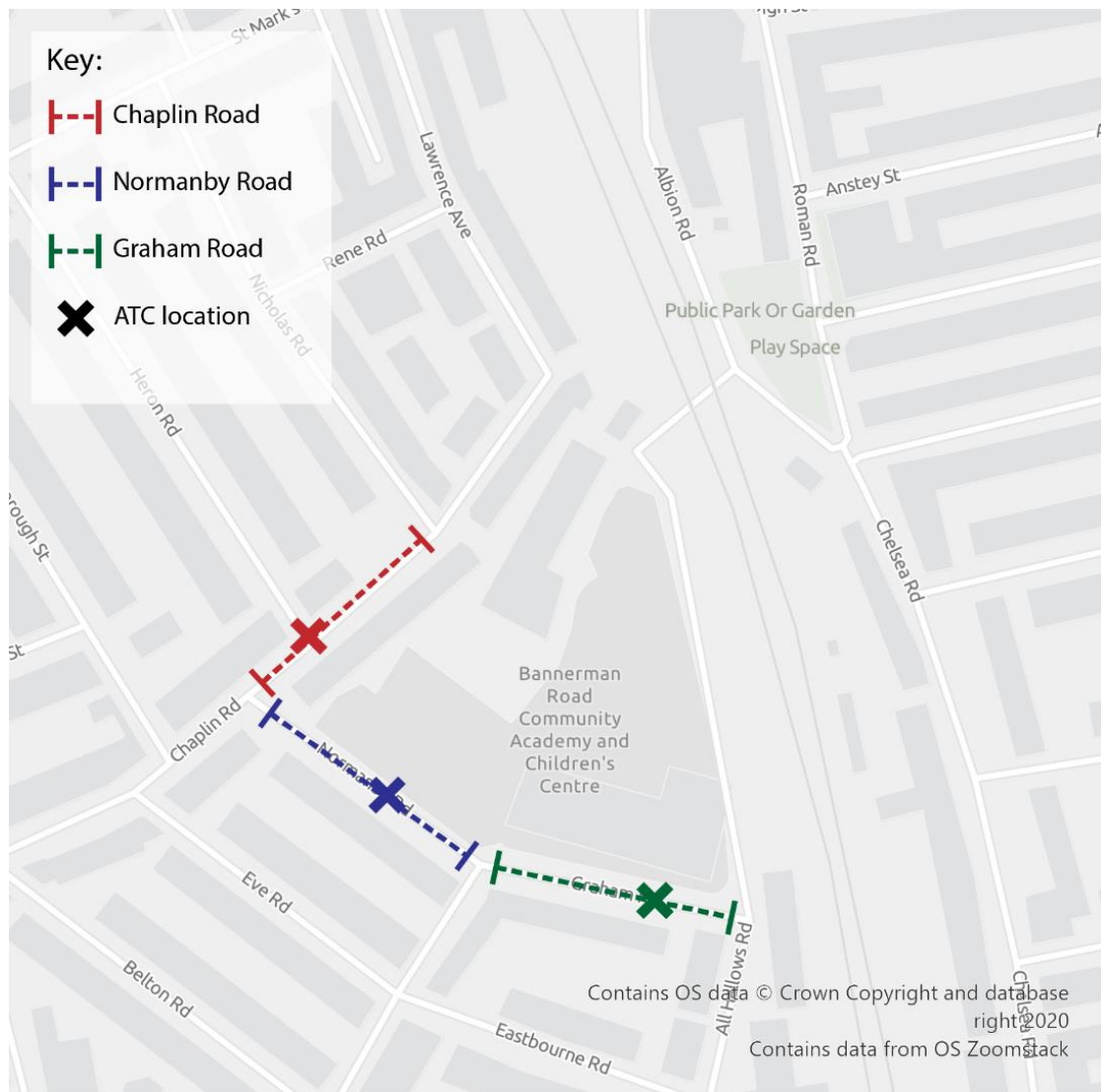
ATCs were used to record traffic data at three of the five locations recorded around the school:

- Chaplin Road
- Normanby Road
- Graham Road

Traffic data on All Hallows Road and Albion Road was captured using AI Video.

Locations captured by ATC are highlighted in Figure 10 and correspond to the data presented in Charts 1 to 6.

Figure 10: Diagram highlighting ATC locations



As a central aspect of this study is to focus on school journeys, the analysis of ATC data has been limited to the five-day working week (Monday – Friday). ATC data for Saturday and Sunday has been omitted from this analysis. Two way vehicle flows have been collated into a single number allowing for a direct comparison between the streets and the years. Traffic flows between 7am and 7pm are being considered to provide a direct comparison to the recording times captured by video.

4.1.3.1 ATC Overall Volume

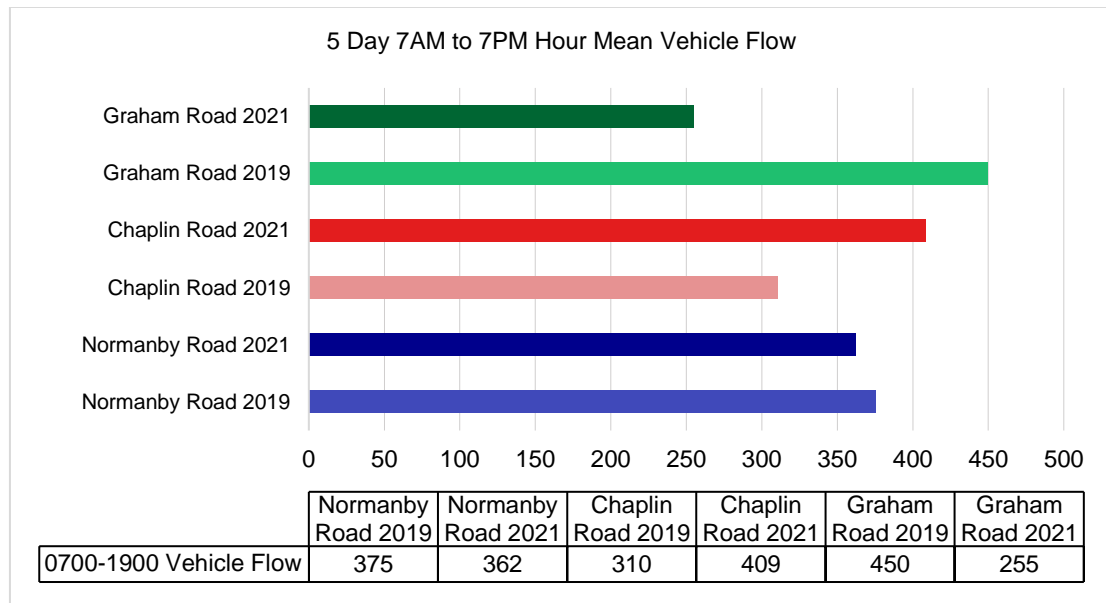
Over the five days in 2019, the aggregated total number of vehicles recorded between 7am and 7pm across all three streets was 1135. In 2021 this figure dropped to 1025 vehicles, evidencing a 10% reduction in traffic.

Within these times (7am to 7pm) Graham Road experienced the most significant drop in the total traffic volume, recording the highest number out of all the streets in 2019 at 450 mean vehicles per day (7am to 7pm). This value dropped by 43% to 255 vehicles per day in 2021.

In 2019 Chaplin Road recorded the lowest traffic volume out of the three streets recorded at a mean five day average of 310 vehicles (7am to 7pm). This figure increased by 32% to 409 vehicles in 2021, making the street the most congested out of the three in 2021.

In 2019 the daily (7am to 7pm) mean value in Normanby Road was recorded at 375 vehicles per day. This value dropped by 3% to 362 vehicles per day in 2021.

Chart 1: 5-day mean vehicle flow

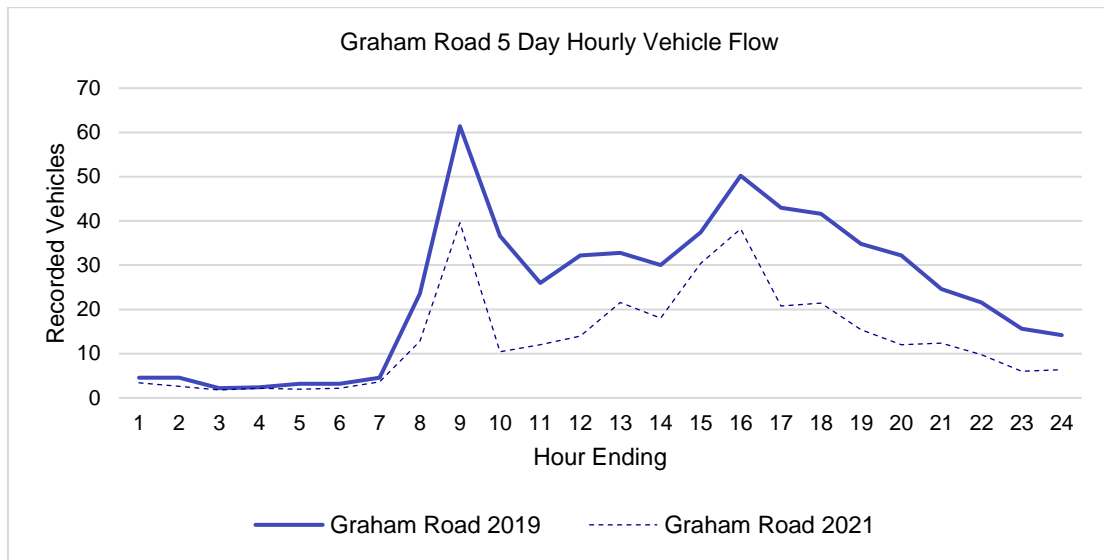


4.1.3.2 Graham Road Vehicle Volume

In 2019 Graham Road recorded the highest volume of traffic out of the three streets, and in 2021 had the most significant proportional drop to become the least congested street. This drop is particularly true of the AM peak between 8am-9am. In 2019, the daily mean averaged 61 vehicles over the hour. However, this value dropped by 34% to a value of 40 vehicles recorded in 2021.

The PM daily peak recorded 50 vehicles in 2019, which decreased by 24% to 38 vehicles in 2021. The change of vehicle flow over the two years kept a similar pattern at a proportionally decreased volume.

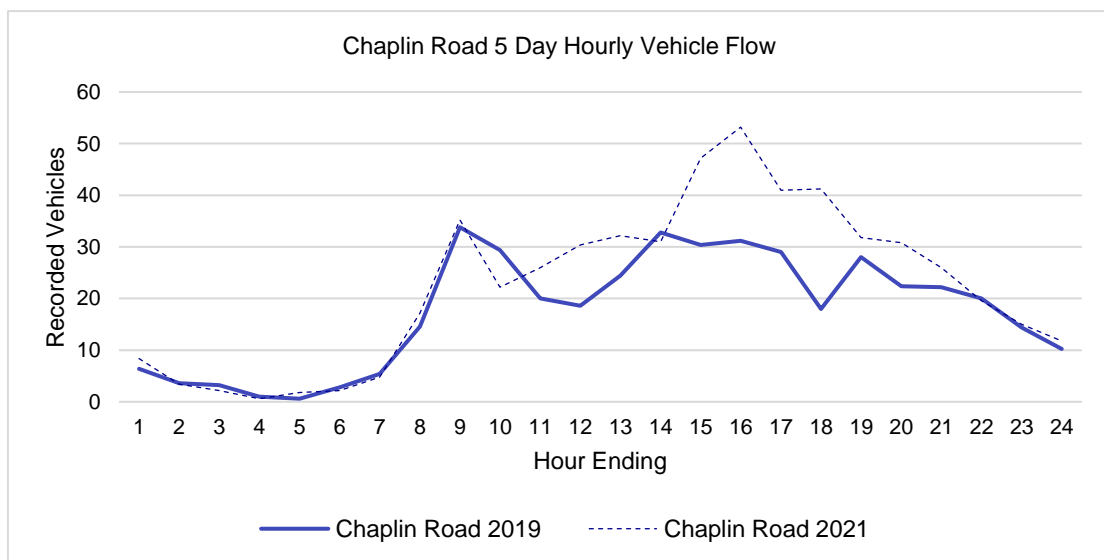
Chart 2: Graham Road 5-day hourly vehicle flow



4.1.3.3 Chaplin Road

AM peak traffic flows remained largely unchanged, with a mean daily value of 34 vehicles recorded in 2019 and 35 vehicles recorded in 2021. PM peak flows saw a rise in 2021, with vehicle numbers increasing to 53 (71% increase) compared to the 31 vehicle movements recorded in 2019.

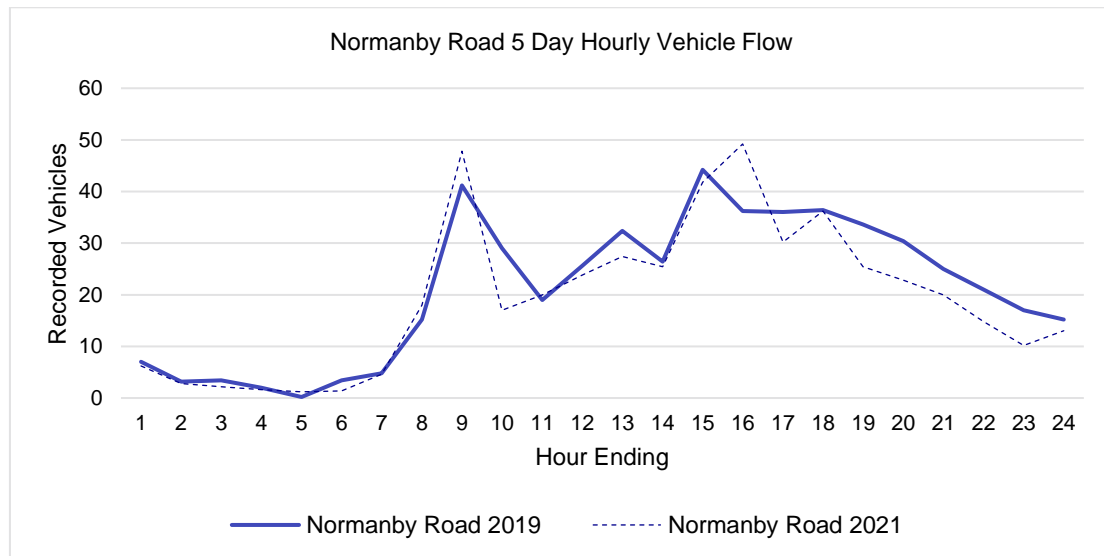
Chart 3: Chaplin Road 5-day hourly vehicle flow



4.1.3.4 Normanby Road

Out of the three monitored streets, Normanby Road showed the smallest comparative change in vehicle movements recorded. While the overall volume between 7am and 7pm decreased, the AM and PM peaks around school drop off and collection appears to have increased. In 2019, vehicle movements recorded at the AM peak totalled 41. This value rose by 17% in 2021 to 48 vehicles. A similar rise at the PM peak was seen with 36 vehicles recorded in 2019, rising by 36% to 49 vehicles in 2021. While the total traffic volume has decreased on Normanby Road between 7am and 7pm, volume around the peak times and the school run appears to have increased.

Chart 4: Normanby Road 5-day hourly vehicle flow



4.1.4 AI Video Analysis – Changing Vehicle Volumes

AI video was used to capture a similar set of data as the ATCs: traffic volumes and speeds. While the ATC data gathered recorded traffic volumes over a week, the AI video recordings provide information for two days. Similar to the ATC recordings, the video data presented will be a one day mean average of the two days. The data recorded covers twelve hours from 7am to 7pm.

All Hallows Road is no longer open to through traffic with any traffic entering the street being required to turn at Frog Marsh and leave from the direction it had entered. Therefore, two-way traffic counts along All Hallows Road were treated as a single vehicle.

Figure 11: Diagram highlighting video camera locations and count lines

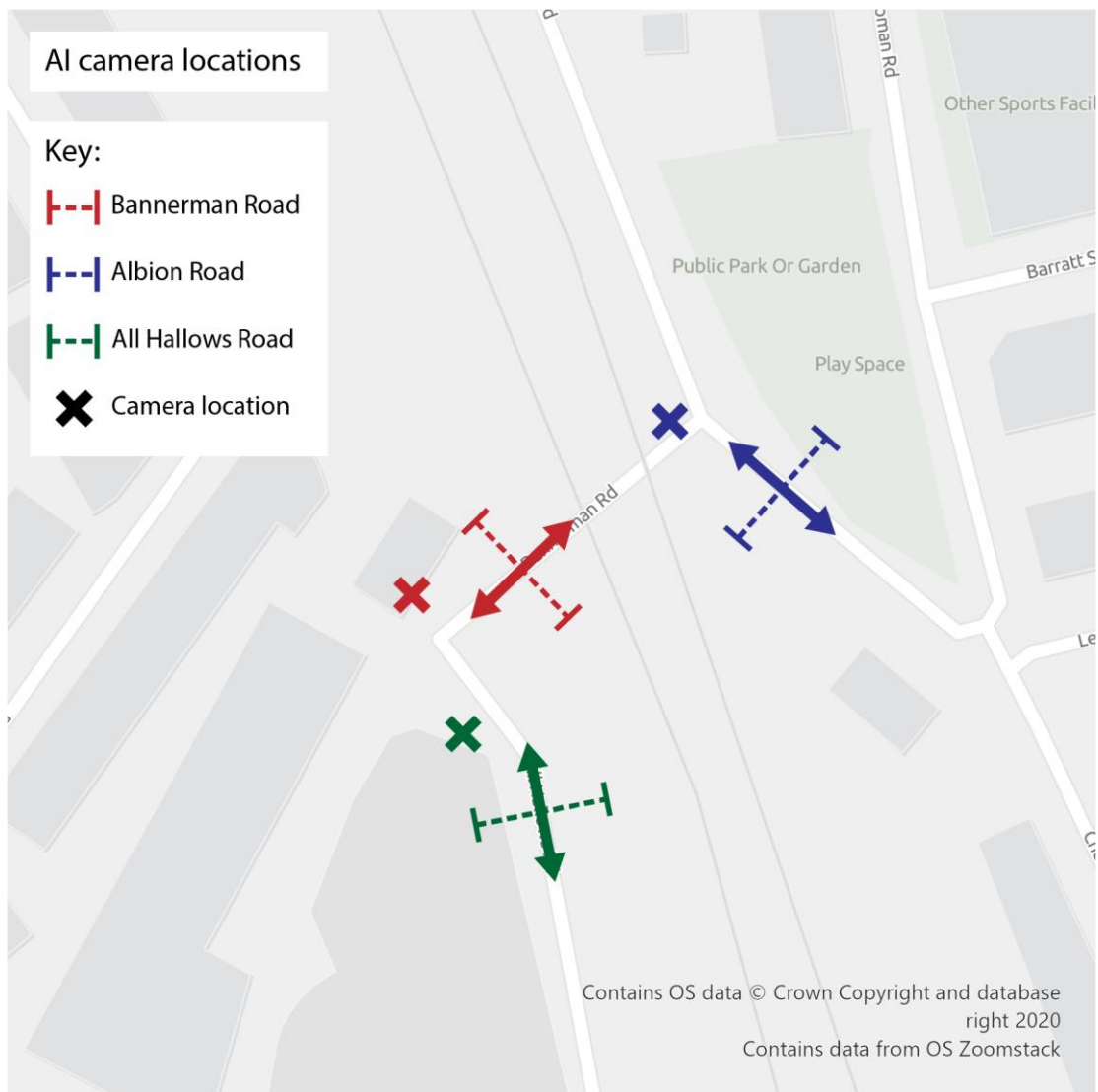
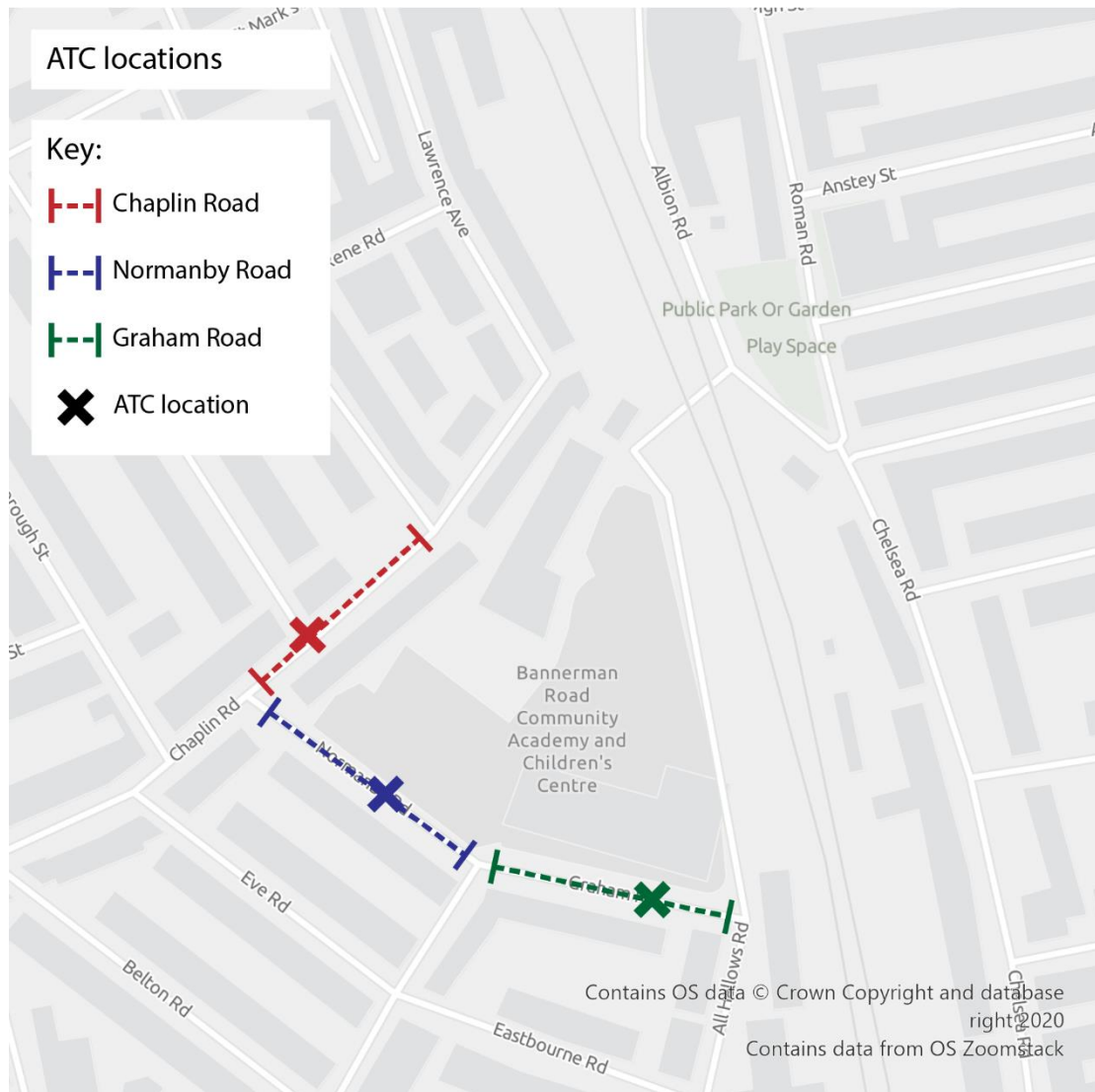


Figure 12: Diagram highlighting ATC locations and area

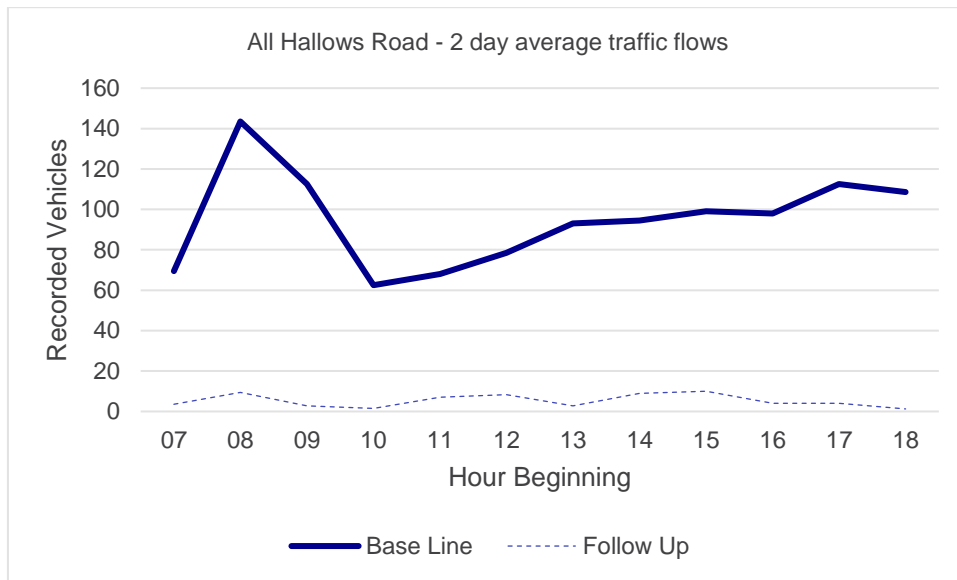


4.1.4.1 All Hallows Road

All Hallows Road recorded a considerable drop in traffic recorded between 2019 and 2021. In 2019, the video capture recorded 1140 vehicles travelling on the street between 7am and 7 pm. This volume dropped by 94% in 2021, with 64 vehicles recorded on the road during the twelve-hour period.

Traffic volume at peak school hours has also been considerably reduced, with 243 vehicles recorded between at peak school times in 2019. In 2021, this value dropped by 92%, to 20 vehicles.

Chart 5: All Hallows Road 2-day hourly vehicle flow

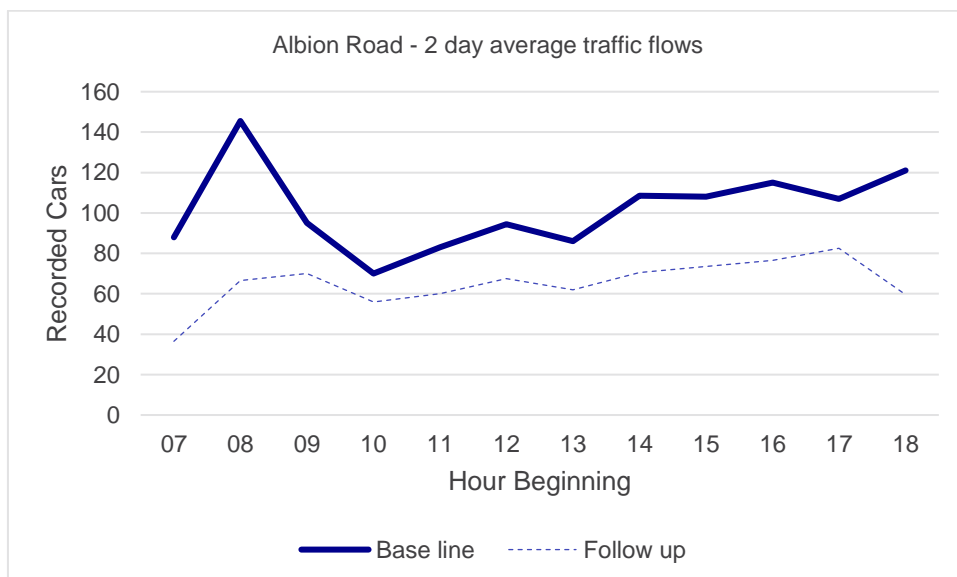


4.1.4.2 Albion Road

Motor traffic volumes on Albion Road decreased during the two years, though to a lesser extent than All Hallows Road. In 2019 a total of 1222 vehicles were recorded travelling on the street between 7am to 7pm, dropping in 2021 by 36% to 781 vehicles.

School peak time traffic fell from 254 vehicles in 2019, by 45% to 140 vehicles in 2021.

Chart 6: Albion Road 2-day hourly vehicle flow



4.1.5 Vehicle Flows Summary

4.1.5.1 Overall Vehicle Flows

Over the two years there has been an overall reduction in motor vehicle flow in the area. This reduction has not been equal on each road. Albion Road, All Hallows Road, and Graham Road have seen more considerable reductions in motor vehicle flow. As might be expected with the closure of the road to through traffic, All-Hallows Road has seen a huge drop in vehicle flow throughout the whole day. However, it should be noted that the road has not been closed to vehicle access and a turning circle has been created at the end of the road to facilitate car movements along the road. Congestion and high vehicle numbers created as a result of parents' desire to park closely to the school entrance is a national issue and something that local authorities and national government alike have struggled to address. Within that context, a 92% drop in traffic volume might be considered particularly significant.

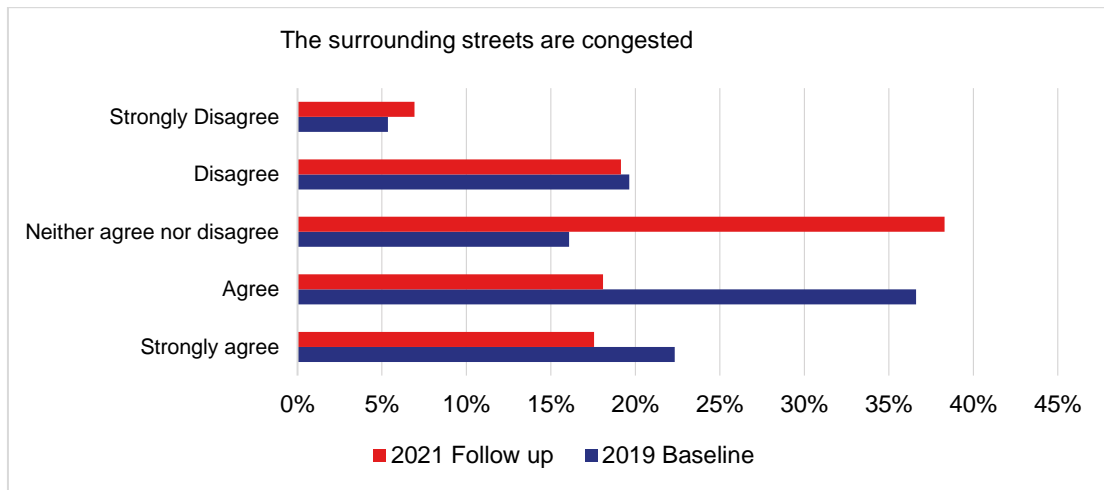
Normanby and Chaplin Road have both experienced a recorded rise in school peak time traffic volumes, with the bigger rise in each case during the afternoon pick up. Normanby Road experienced an increase from 36 to 49 (36%) vehicles during 3pm to 4pm and Chaplin Road 31 to 43 vehicles (71%) during the same time. Further investigation capturing sentiment from the residents of these streets to understand the impact would be useful to better understand the effect of this traffic rise. However, no specific comments were captured through the perception surveys highlighting this as an issue.

4.1.6 Survey Response – Perceptions of Congestion

In 2019, when asked if they agree with the following statement “The surrounding streets are congested”, 66 out of 112 (59%) of the respondents either agreed or strongly agreed with the statement. 25% respondents disagreed or strongly disagreed.

When asked again in 2021, levels of responses disagreeing with the statement remained broadly the same. Respondents agreeing and strongly agreeing with the statement, fell to 36%.

Chart 7: Perception of congestion on the surrounding streets



4.2 Road safety

4.2.1 Objectives

To understand if the junction closure represents an improvement in road safety?

This project has considered a number of established indicators for evidencing improvements in road safety:

- Traffic speeds
- Crossing behaviour
- Sentiment

Traffic calming with the aim of reducing traffic speeds is an established method of improving road safety. Research compiled by AXA (2013) indicated that in 37% of local school areas at least one child sustained a road injury each year from 2006 to 2011. Furthermore, in this period there were over 85,000 injuries sustained by children on roads within a 500-metre radius of schools. In 2015, 1,283 children on foot were killed or seriously injured on UK roads, and 40% of these incidents were in the morning or evening of a school day (Department for Transport, 2016).

This evidence highlights the risk posed to schoolchildren travelling to and from school. This risk is heightened by the relationship between speed and road safety. Research by Wann et al. (2011) suggested that primary-age schoolchildren cannot accurately judge the speed of vehicles travelling above 25MPH due to underdeveloped perceptual abilities. The danger this poses to schoolchildren is exacerbated by the direct relationship between speed and accident severity, with higher vehicle speeds resulting in higher accident risks and higher risks of fatality and injury.

Pedestrian crossing behaviour can indicate feelings of safety when crossing the road. If the majority of crossing movements happen at designated, official crossings it can suggest that users do not feel safe crossing the road and are only happy to do so at these formal crossings. If crossing movements are well distributed across the street, it implies that pedestrians feel safe crossing the road and are happy to do so anywhere.

Perceptions of safety are important as there is often a disparity between objective measures of road safety and subjective perceptions of pedestrians. Even if a road is deemed safe through empirical research, if parents do not perceive it to be safe, they will not allow their children to walk to school, therefore reducing opportunities for active travel. This can also

contribute to issues with traffic volume if a higher proportion of parents drive their children to school.

Traffic volumes are also considered, as discussed in detail in Chapter 4.1.

4.2.2 Metrics

- Changing vehicle speeds and volumes on streets surrounding Bannerman Road Community Academy and Frog Marsh junction closure.

ATCs and video were used to record traffic speeds at five locations around the school in 2019 and again in 2021.

- Change in crossing behaviour of pedestrians passing through the closed junction.

ATCs and video were used to record traffic speeds at five locations around the school in 2019 and again in 2021.

- Perceptions of safety captured through base line and follow up surveys.

A number of questions aimed at capturing sentiment relating to road safety were included in both base line and follow up surveys.

4.2.3 ATC Analysis

As with the analysis of the ATC data on vehicle volumes in section 4.1.3, this section will analyse the five-day working week as this data relates directly to school travel behaviour. Between 2019 and 2021, there was an average 13% decrease in mean speed recorded over the five days between the three roads and a 17% decrease in 85th percentile speed.

4.2.3.1 Graham Road

Graham Road saw the most significant change. In 2019 the mean speed over the five days was recorded at 17.57 MPH, with an 85th percentile speed of 22.98 MPH. These figures dropped in 2021, with the average mean speed falling by 35% to 11.32MPH. The 85th percentile speed decreased by 37% to 14.43MPH in 2021.

4.2.3.2 Normanby Road

Normanby Road experienced the least change in traffic speeds. Across the five days in 2019, the mean speed recorded was 17.33MPH, which fell by 6% to 16.36MPH in 2021. The 85th percentile speed fell from 23.47MPH in 2019 by 13% to 20.32MPH in 2021.

4.2.3.3 Chaplin Road

Chaplin Road was the only road that did not experience any reductions in traffic volume over the five days. The 2021 recorded data shows mean traffic speed marginally increased by 4% from 14.62MPH in 2019 to 15.16MPH in 2021. The 85th percentile speed increased by 4%, from 18.5MPH in 2019 to 19.17MPH in 2021.

Chart 8: 5-day mean speed

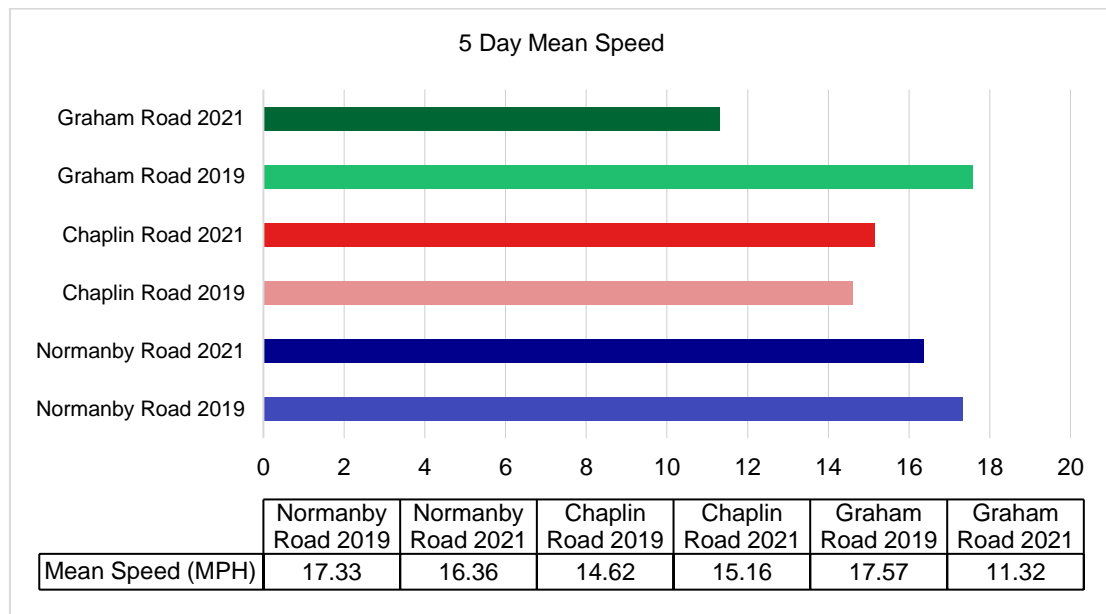
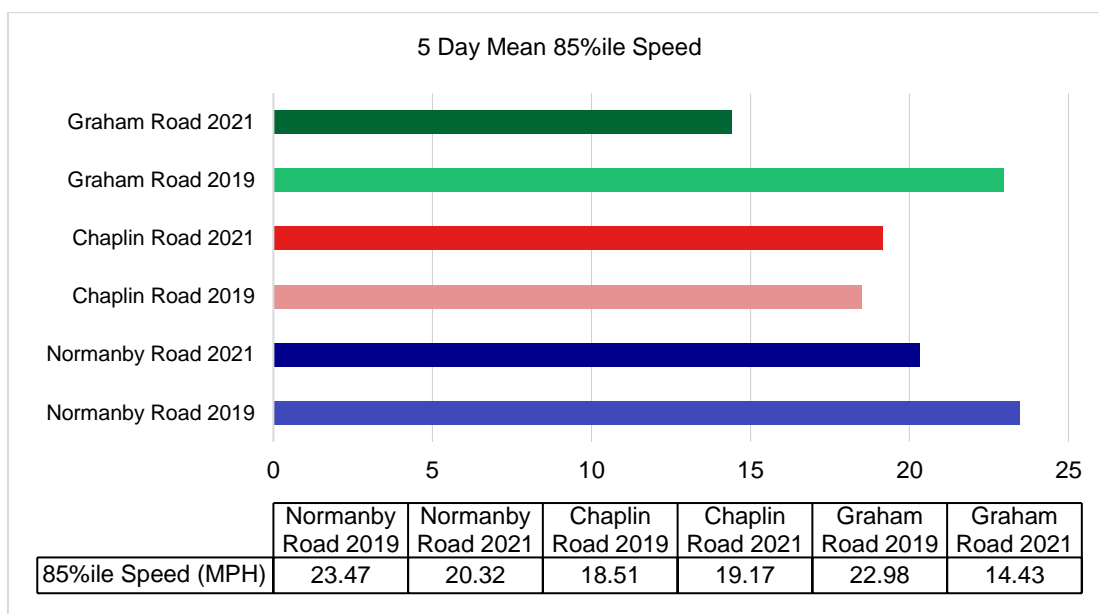


Chart 9: 5-Day Mean 85th percentile Speed



4.2.4 Video Analysis

Speed data measured on Albion Road and All Hallows Road was captured using AI video data. As with vehicle volume on the two streets, the data was collected over two days, with an average 85th percentile and mean speed being drawn from the results.

4.2.4.1 All Hallows Road

All Hallows Road saw the most significant decrease in vehicle speed of all the streets monitored. In 2019 the average north and south 85th percentile speed measured on the road was 16.92MPH. In 2021 the average 85th percentile speed captured decreased by 55% to 7.64MPH. The mean speed on All Hallows Road dropped by 59% from 15.77MPH in 2019 to 6.46MPH in 2021.

Speed data was captured towards the northern end of the road on approach to the newly installed turning point, therefore vehicles may be driving more slowly at this point than further south along the road.

As discussed later in section 4.4.3.1, in 2019, the majority of survey respondents perceived All Hallows Road as 'very dangerous'. This sentiment changed in 2021 with most respondents now considering the street to be a safe space for walking and cycling.

Chart 10: All Hallows Road 85th percentile Vehicle Speeds

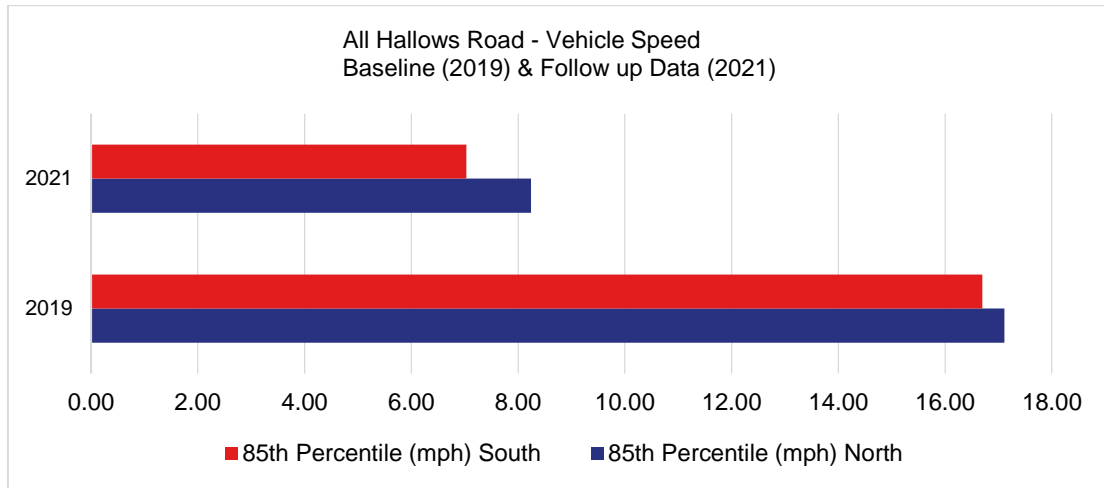
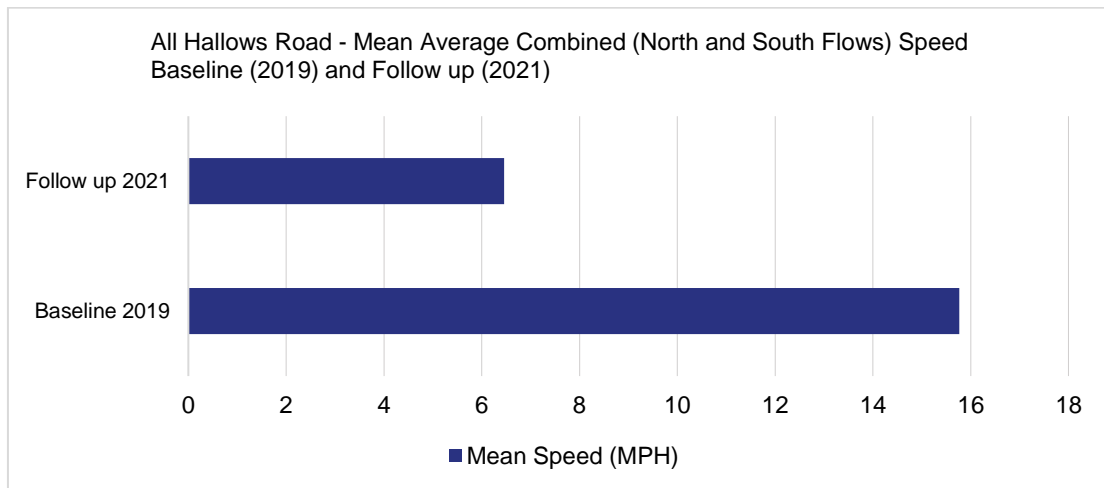


Chart 11: All Hallows Road Mean Average Speeds



4.2.4.2 Albion Road

In 2019 the 85th percentile speed recorded on Albion Road was 11.50MPH. This increased by 18% in 2021 to an 85th percentile speed of 14.08MPH. The mean speed recorded on Albion Road in 2019 was 11.21MPH which increased by 20% in 2021 to 13.40MPH.

A potential cause of these speed increases could be attributed to the junction changes around the point closure, including the removal of the priority junction and the give way markings on the approach to the bridge. However, it should be noted that even with this marginal increase, average and 85th percentile, speeds remain exceptionally low.

Chart 12: Albion Road 85th percentile Vehicle Speeds

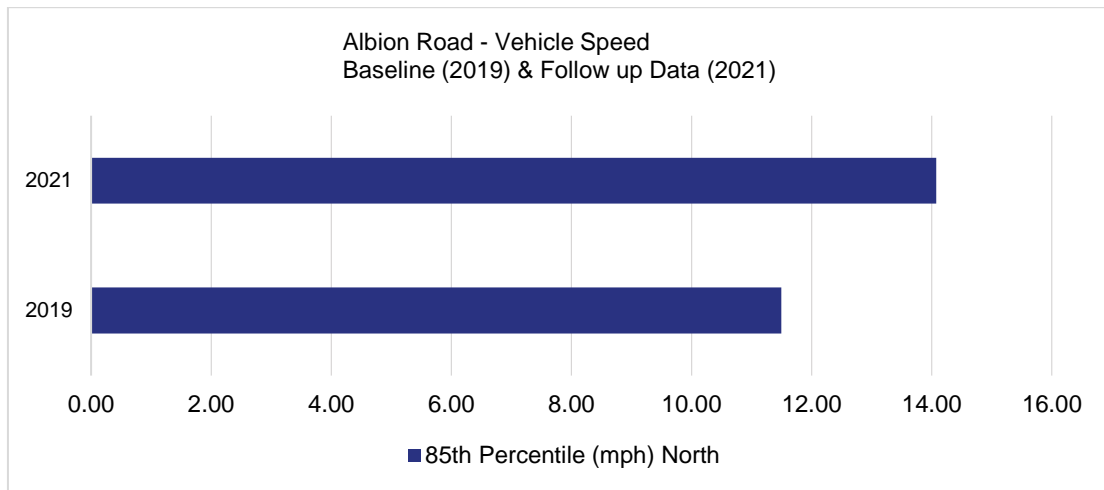
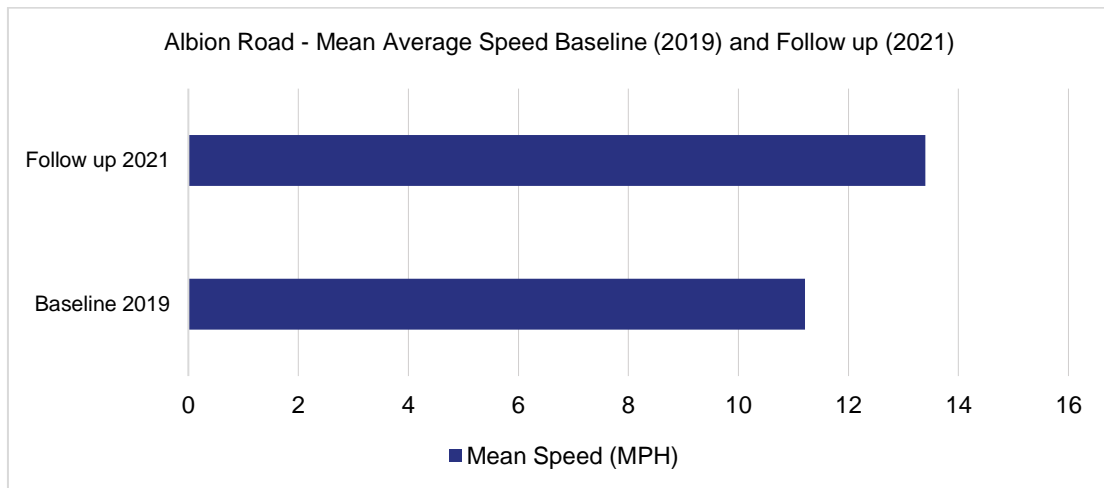


Chart 13: Albion Road Mean Speed



4.2.5 ATC and Video Speed Summary

All Hallows Road has seen the most considerable reductions with speeds halving in value between the two years. Graham Road also saw significant decreases during the recording period. Both Albion Road and Chaplin Road saw speed increases, however both were marginal. While some of the streets experienced an increase in speed from that recorded in 2019, all the mean speeds in the streets recorded are now at 20mph or below and, in the case of All Hallows Road, only 6 mph.

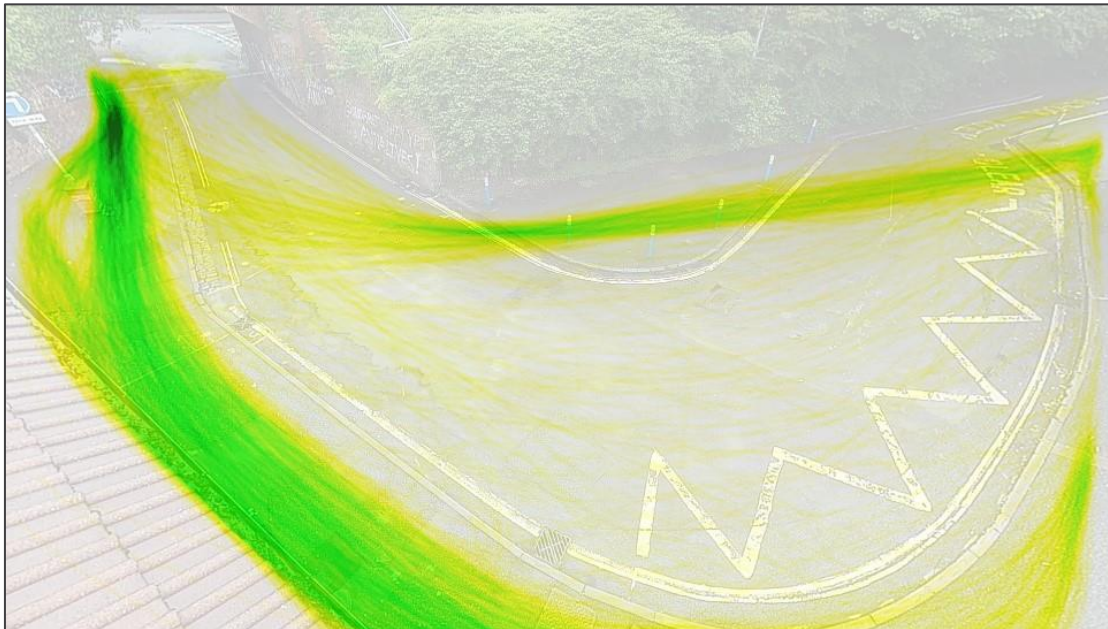
4.2.6 Pedestrian Behaviour

AI video was used to capture pedestrian movement around the junction between Bannerman Road and Albion Road. The use of AI video allowed the filtering of and graphic depiction of movement patterns according to mode. The movement graphics depict the entirety of movement across the space of both more formal desire lines as well as the more informal movements. These filtered images provide a clear visual depiction of the changing use of space resulting from the infrastructure changes, both on and off carriageway.

4.2.6.1 Pedestrian Behaviour – Bannerman Road

In 2019, pedestrian movement was primarily focussed within a small area of the available road space, concentrated on the single footway bordering the nursery entrance (Figure 13). Very few movements were recorded across the carriageway other than a relatively small desire line that crosses onto the footway build out and then onwards along All Hallows Road. Very few movements were recorded within the carriageway.

Figure 13: Baseline Pedestrian Flows - Bannerman Road



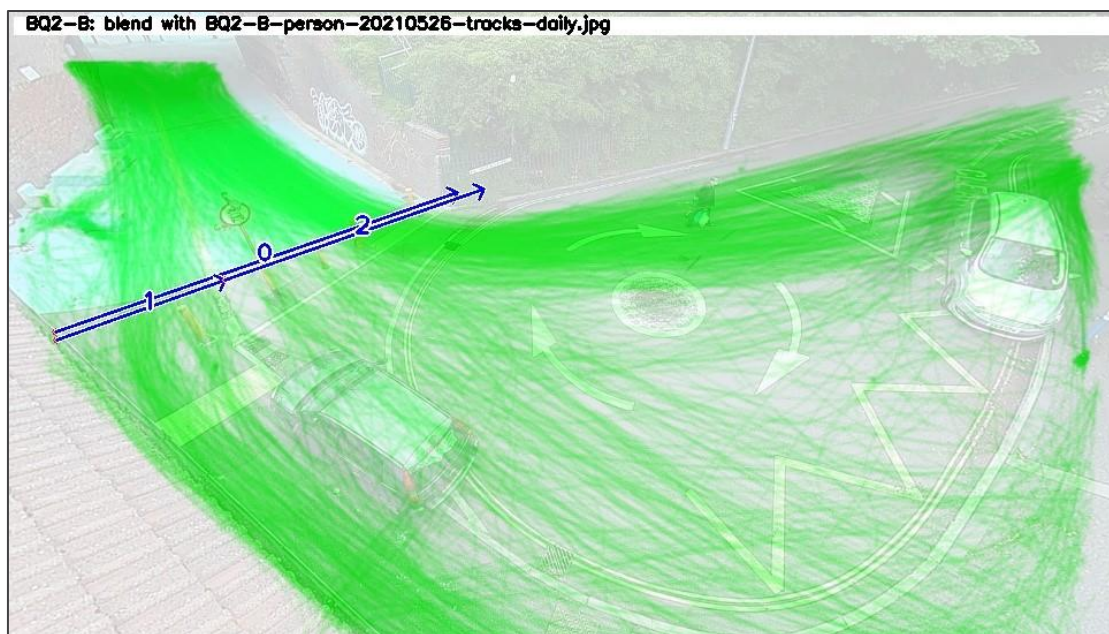
In 2021, pedestrian movement would appear to take on much more of a shared space appearance, with extensive pedestrian tracks across the whole of the carriageway, despite the road still live to traffic (Figure 14).

The two primary desire lines observed in 2019 remain, however the change in area used by pedestrians under the bridge is profound, with the whole of the roadway now being heavily used.

There would also appear to be a significant amount of activity around the street furniture, indicating that the space is now being used socially.

The indication is that pedestrians are now feeling considerably more empowered to use not only the newly created pedestrian area under the bridge, but the whole of the space leading to the entrance of the school. The degree to which this change in behaviour can be attributed to place-making, or just the significant reduction in traffic (Figure 16) is not clear given the lack of a control measure. However, the extensive pedestrian footfall across the space would indicate that users now feel safer and enabled to walk within the roadway.

Figure 14: Follow up Pedestrian Flows - Bannerman Road



4.2.6.2 Car Behaviour – Bannerman Road

With the closure of the junction, recorded vehicle volumes and speeds have seen a significant reduction along All Hallows Road. Figure 15 shows a filtered image from 2019 of the traffic passing under the bridge and along All Hallows Road. The comparative change in traffic volume is apparent in Figure 16, showing the traffic flow as captured in 2021 with the junction now closed and through traffic removed. Whereas in 2019, vehicle traffic movements dominated the road space with pedestrian movements contained to the side of the street

(Figure 13), the comparative 2021 images now show pedestrian movements dominating the space (Figure 14) and very few vehicle movements.

Figure 15: Baseline Car Flows - Bannerman Road

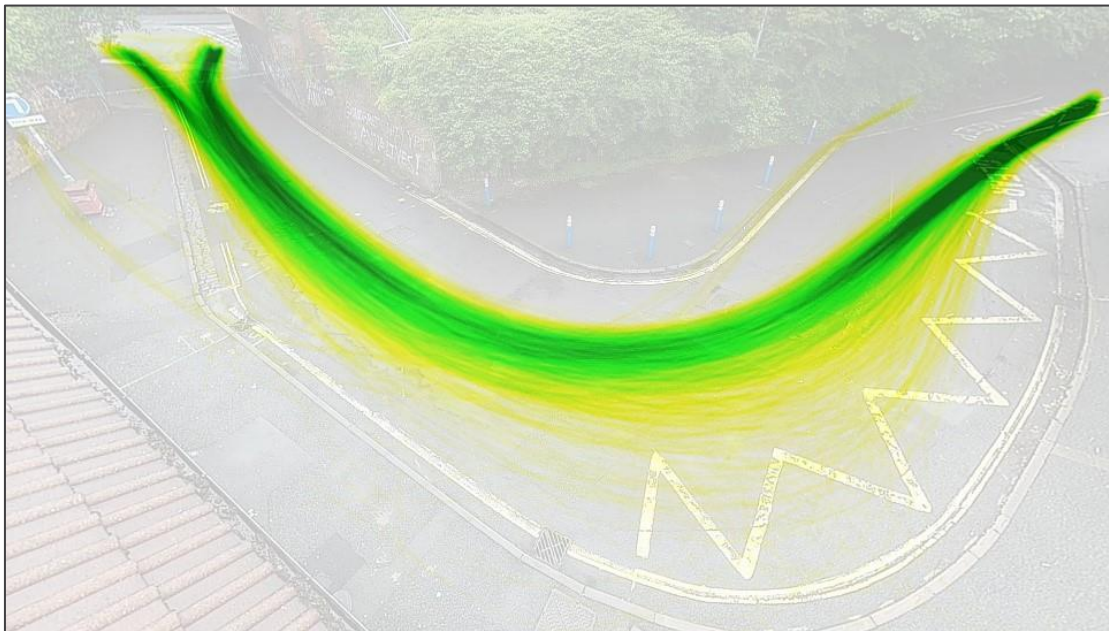
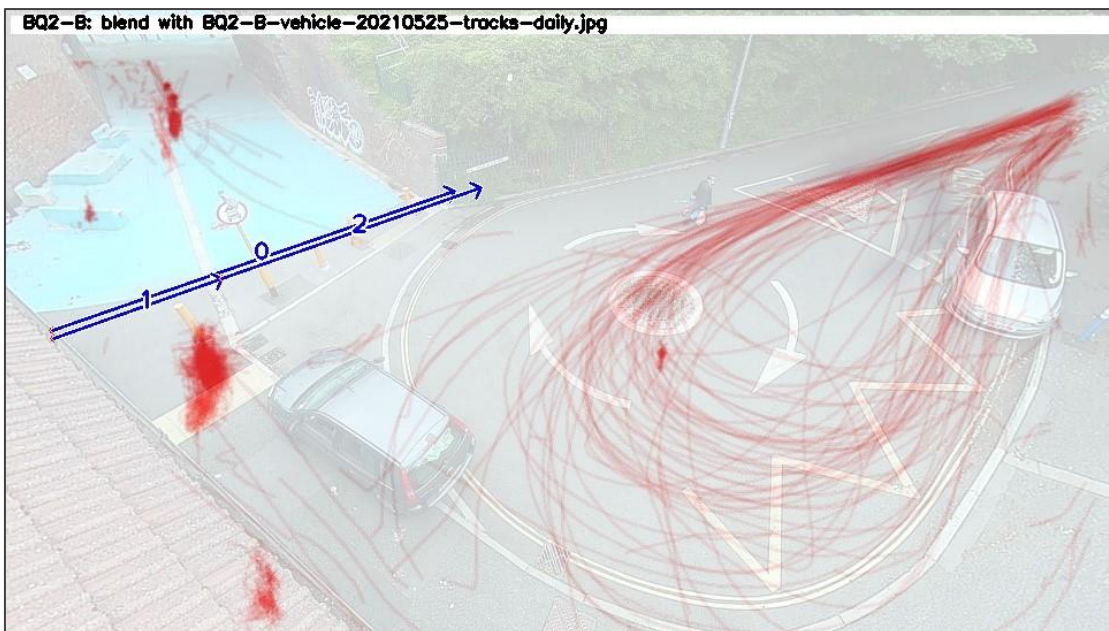


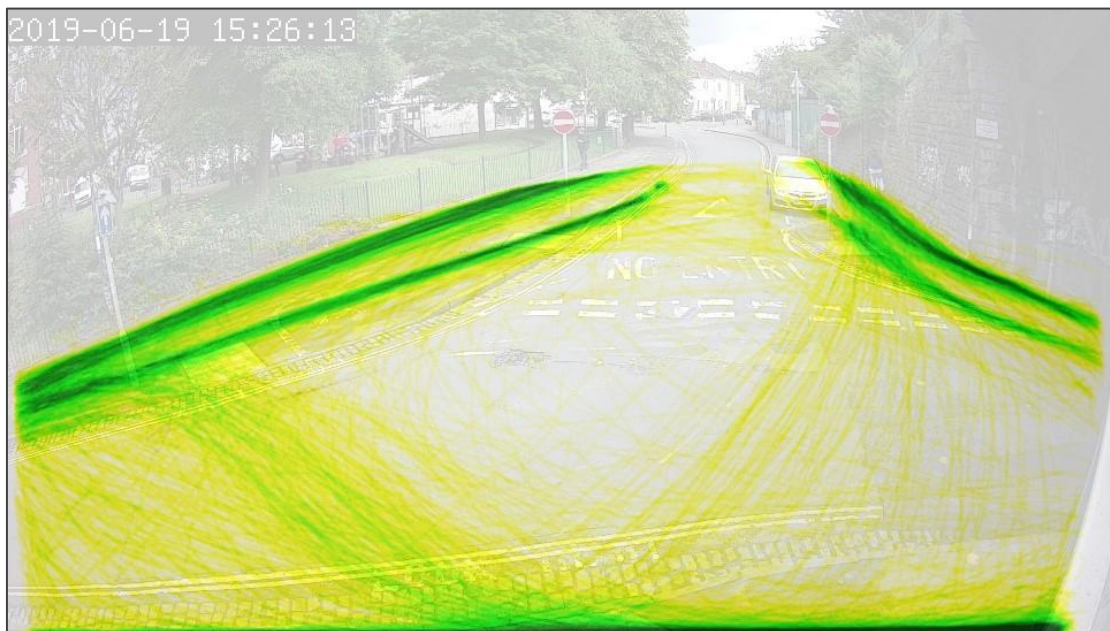
Figure 16: Follow up Car Flows - Bannerman Road



4.2.6.3 Pedestrian Behaviour – Albion Road

Prior to the junction closure, pedestrians had to consider traffic movement from three directions (Figure 19). Recorded pedestrian movement from 2019 (Figure 17) highlighted crossings of Albion Road were almost entirely contained to the three courtesy crossing points provided.

Figure 17: Baseline Pedestrian Flows - Albion Road



The closure of the junction and removing the priority markings at the approach to the junction, whilst potentially resulting in a slight increase in traffic speed, also removed one arm of the junction and the need for pedestrians to consider traffic flow from three directions. Traffic now provides a clear one-way flow along Albion Road (Figure 20).

Pedestrian crossing behaviour recorded in 2021 (Figure 18), whilst not as dominant across the space as captured on the remodelled All Hallows Road side of the bridge (Figure 14), would now appear to have taken on a more informal characteristic. Whilst the provided crossing points for Albion Road (unchanged from the previous junction layout) would appear to remain the preferred crossing points, there is some evidence that pedestrians now using the whole of the carriageway space under the pedestrianised bridge, are stepping out between the bollards at the bridge entrance and crossing the road more extensively along the extent of the carriageway to the front of the bridge.

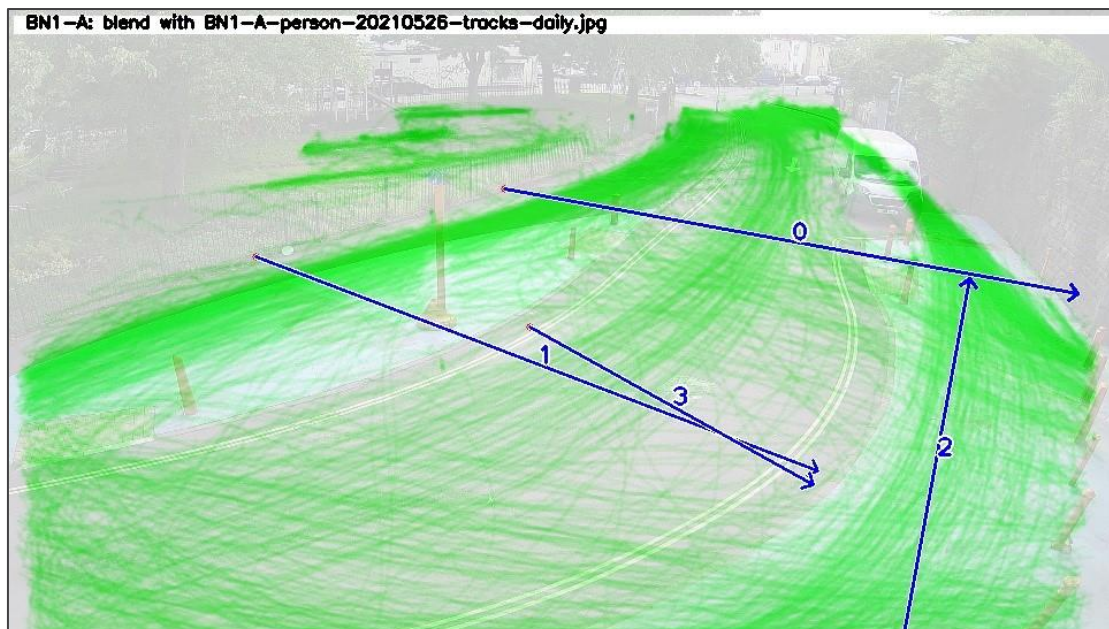
Although a rise in speed has been recorded, it should be remembered that the increased 85th percentile of 14mph remains particularly low and well within the limit for designating on

carriageway cycling. A number of reasons combined with the low traffic speed may have contributed to the increase in informal crossing patterns.

Previously pedestrians were required to utilise a small section of footway along one side of the bridge and negotiate converging traffic movements between Bannerman Road and Albion Road. Although traffic speeds were marginally lower, the feeling of risk with a constrained footway and converging traffic movements, may be accentuated, particularly when accompanying children. Use of the designated crossing points may therefore have been a preference to the risk of crossing at other points.

With the removal of traffic from under Frog Marsh bridge, pedestrians are now able to use the whole of the available space under the bridge, exiting the bridge along a wider section of footway. Speeds have marginally increased, however remain low and there are no longer converging traffic movements between Bannerman Road and Albion Road. Negotiating a single stream of approaching vehicles, rather than multiple, may feel safer and crossing at desire lines, rather than designated crossing points, may feel less of a risk, even with children.

Figure 18: Follow up Pedestrian Flows - Albion Road



4.2.6.4 Car Behaviour – Albion Road

Before the intervention in 2021, Albion Road was a three-way junction (Figure 19). As discussed in section 4.2.4.2, monitored speeds at the priority junction were lower in 2019. Potentially drivers were more aware of conflict from other vehicles and reduced their speeds on approach to the priority markings. However, the increase in speeds in 2021 was marginal and remained well below 20mph in both mean speed and 85th percentile speed.

The filtered vehicle movements recorded in 2021 (Figure 20) still capture a dominance of traffic movement tracks along the road.

Figure 19: Baseline Car Flows - Albion Road

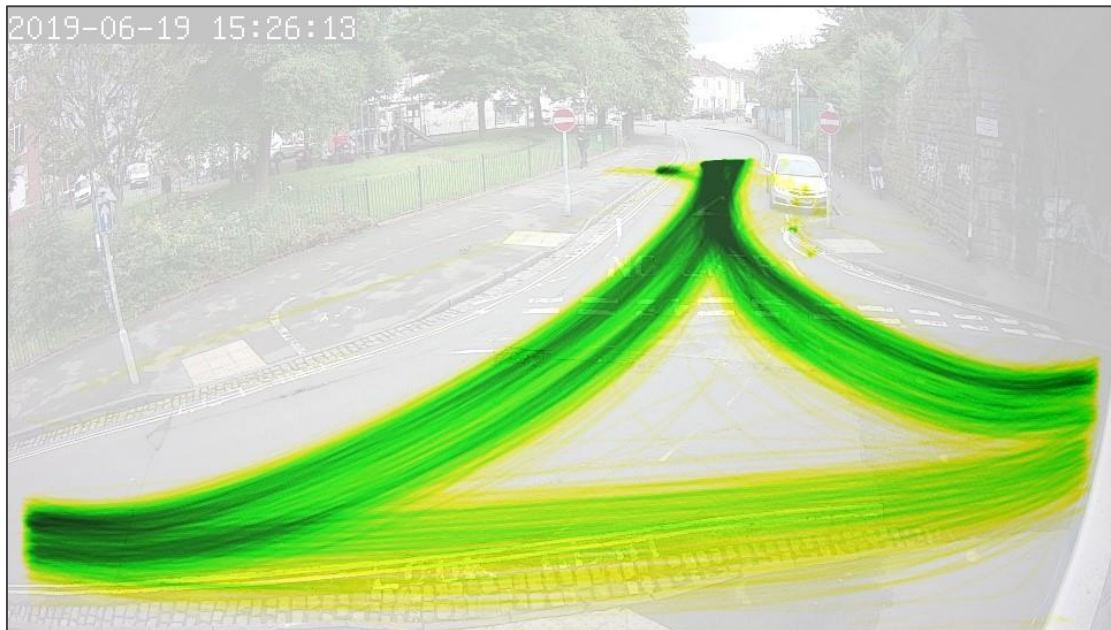


Figure 20: Follow up Car Flows – Albion Road

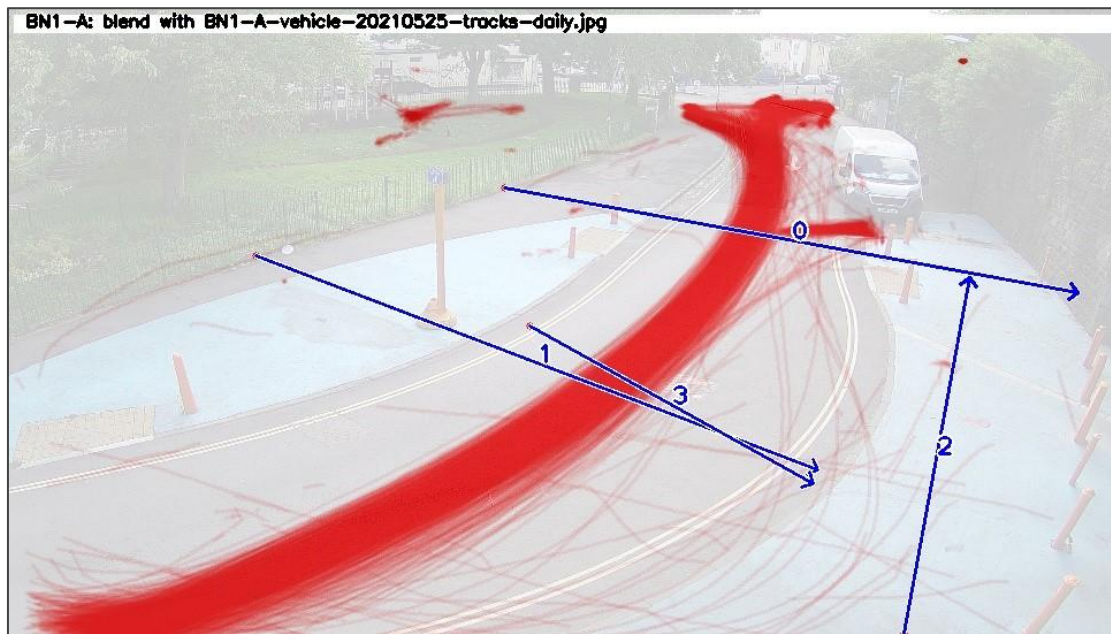


Figure 21: Changes to pedestrian movement as a result of the junction change



4.2.7 Pedestrian/Vehicle interaction – Summary

There is evidence of change in pedestrian behaviour at either side of the closed junction. This demonstrates a propensity for pedestrians to use a greater number of crossing positions throughout the whole of the junction area.

The number of informal crossing movements across the whole of the carriageway appears more dominant on the Bannerman Road side. It would be reasonable to largely attribute this to the reduced traffic volume and drop in traffic speeds.

Traffic flows along Albion Road are considerably higher than All Hallows Road and have increased in speed slightly. However, pedestrian movement tracked across the junction provides some evidence that at this side of the junction pedestrian crossing behaviour has

also become more informal. This is evidenced by an increase in crossing movements across a greater proportion of the junction.

4.3 Walking and Cycling

4.3.1 Objectives

To understand if levels of walking and cycling related to the school run increase following the closure of the junction.

A key objective of closing the junction between Bannerman Road and Albion Road is to improve road safety and create a safe and attractive environment, that in turn will encourage higher levels of walking and cycling to and from Bannerman Road Community Academy.

4.3.2 Metrics

- Measured changes to volumes of walking and cycling through junction.

Video cameras captured pedestrian and cycle movements on Albion Road, Bannerman Road (either side of the junction closure) and the other approach to school along All Hallows Road. This monitoring was carried out during two days between 7am and 7pm in 2019 and again in 2021.

- Perception survey responses, stating a higher propensity to walk or cycle to Bannerman Road Community Academy.

In addition to the use of video to capture footfall and cycle movements, a question included in both the base line and follow up surveys, asked how the participant would usually travel to the Bannerman Road Community Academy.

4.3.3 Video Analysis – Active Travel Volumes

This section will use the video data introduced and discussed in sections 3.2.2, 4.1.4, and 4.2.4.6.4. Comparatively, the method used to record pedestrian and cyclist flows through the junction closure is the same as outlined in section 4.1.4, with pedestrians and cyclists substituting vehicles. For reference, Figure 9 in section 3.3 demonstrates the locations of the cameras.

4.3.3.1 School Operational Hours

Morning drop-off at the school is between 8:30am and 8:45am, with afternoon pick up at 3pm.

The school operate a morning and afternoon nursery. Morning nursery opens at 8:30am until 11:30am and afternoon nursery begins at 12:30pm until 3:15pm. There is also an afterschool club that operates between 3pm and 6pm.

4.3.3.2 Class and year group absences

The school have confirmed that classes and year groups were operating normal hours and there were no specific class or year group absences at the time of follow up data collection on the 24th and 25th May. However, absences related to Covid 19 were common and are likely to have an impact on school pedestrian flows and numbers.

4.3.3.3 Walking flows across all 3 sites

Total recorded footfall across all 3 sites, both at school peak times and across the 12hr recorded period, remained largely unchanged. There was a 2% increase in the recorded two-day average of pedestrians (from 940 to 962) at school peak times and a 3% increase in the two-day average across the recorded 12hr period, from 2691 to 2776 trips.

4.3.3.4 Walking Flows – Albion Road

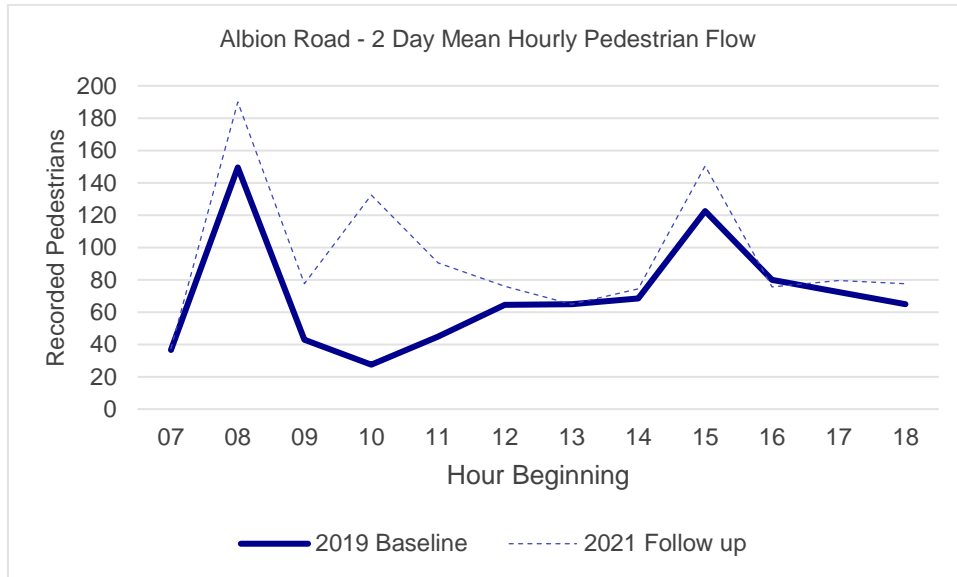
A count line was positioned across the width of Albion Road, south of the Frog Marsh bridge. Pedestrians were counted crossing the line in both northerly and southerly directions between the hours of 7am and 7pm.

In 2019, a mean daily average of 840 pedestrians were recorded travelling on Albion Road between the hours of 7am to 7pm. When measured again in 2021, there was a recorded increase in pedestrian usage of 34% to 1127.

2019 AM school drop off (8am to 9am) pedestrian flows were 150 pedestrians. This rose by 27% in 2021 to 190 pedestrian movements recorded. PM school flows (3pm to 4pm) along Albion Road in 2019 were 123. In 2021, this increased by 23% to 151 pedestrian movements.

The combined 8am to 9am and 3pm to 4pm pedestrian flows along Albion Road in 2019 were 272, increasing by 25% over the same period in 2021 to 341.

Chart 14: Albion Road – 2 Day Average Hourly Pedestrian Flow North and South Combined



Movements in each direction would appear to indicate a pattern relating to school pick up and drop off times. There is a significant spike in movement at AM peak (8am to 9pm) in a northerly direction towards the school, indicating parents accompanying children to school.

School drop-off time is 8:30am to 8:45am. The southerly direction, away from the school along Albion Road, shows a lesser spike in movement, indicating parents returning from the school following drop off.

Chart 15: Albion Road – North Pedestrian Movements Across 4 Days, Base Line and Follow Up – Direction of School

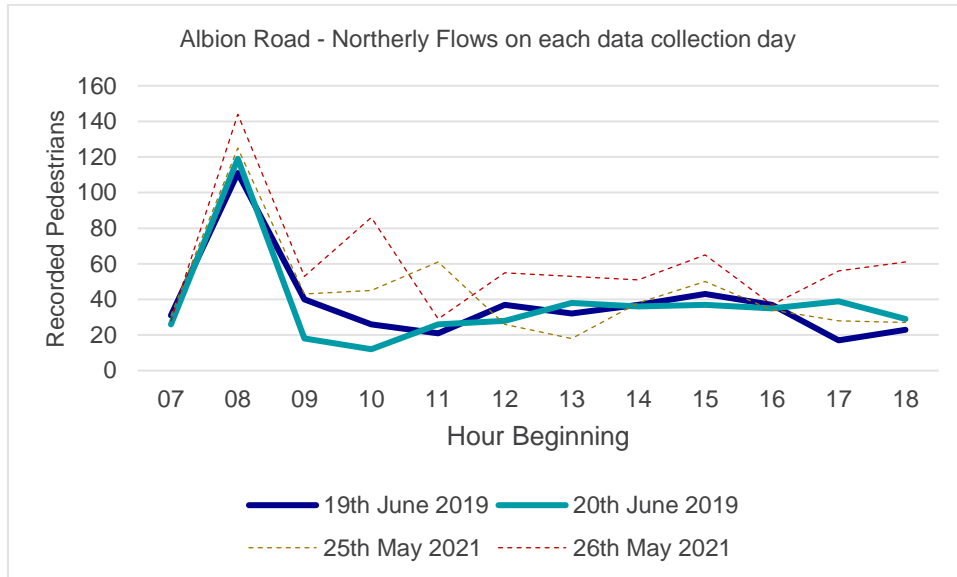
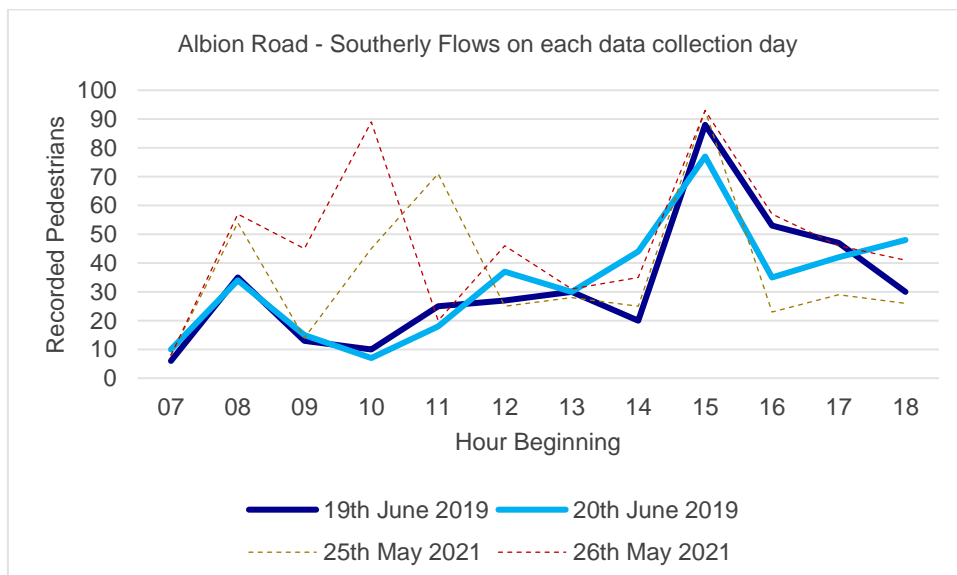


Chart 16: Albion Road – South Pedestrian Movements Across 4 Days, Base Line and Follow Up – Direction Away from School



4.3.3.5 Walking Flows – Bannerman Road

A count line was positioned across the width of Bannerman Road, at the entrance of the Frog Marsh bridge. Pedestrians were counted crossing the line in both easterly and westerly directions between the hours of 7am and 7pm.

In 2019, a mean daily average of 1036 pedestrians were recorded passing underneath the bridge at Bannerman Road between the hours of 7am to 7pm. When measured again in 2021, there was a recorded decrease in pedestrian usage of 13% to 904.

2019 AM school drop off (8am to 9am) pedestrian flows of 214 were recorded. This was largely unchanged in 2021, with a 1% increase to 217 pedestrian movements recorded. PM school flows (3pm to 4pm) under Frog Marsh bridge in 2019 were 226. In 2021, this decreased by 31% to 155 pedestrian movements.

The combined 8am to 9am and 3pm to 4pm pedestrian flows along Bannerman Road in 2019 were 440, decreasing by 16% over the same period in 2021 to 371.

Movements in each direction between 8am and 9am and again at 3pm to 4pm, would appear to indicate a pattern relatable to school pick up and drop off times. Morning drop off is 8:30am to 8:45am and afternoon pick up is at 3pm. There is significant spike in movement at AM peak (8am to 9pm) in a westerly direction towards the school, indicating parents accompanying children to school.

The easterly direction within the same hour, away from the school towards Albion Road, shows a lesser spike in movement (typically between 30% to 40% less than the opposite direction), indicating parents returning from the school following drop off.

Between 3pm and 4pm, the same pattern is repeated, but in the opposite direction as illustrated in charts 17 and 18.

Chart 17: Bannerman Road – Westerly Pedestrian Movements, Base Line and Follow Up – Direction to School

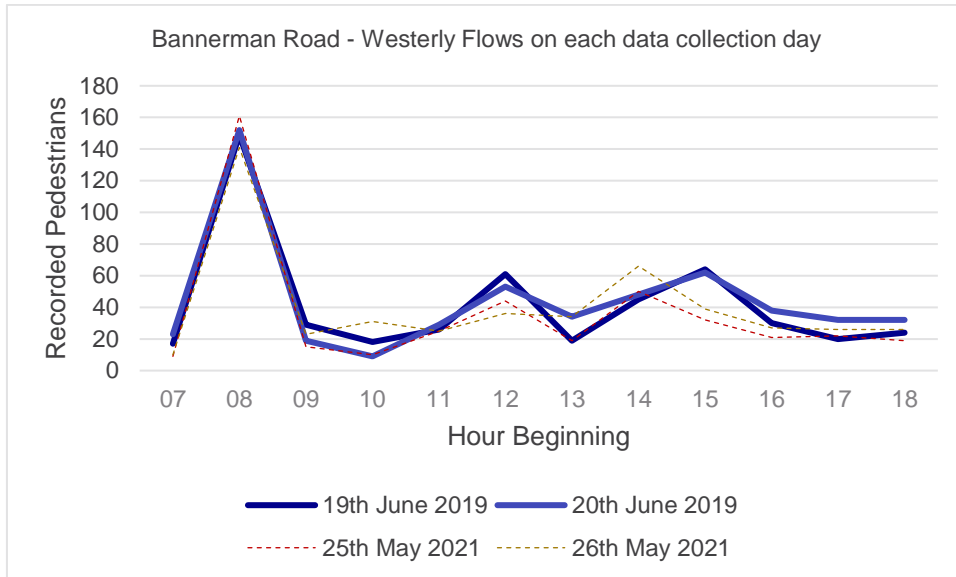
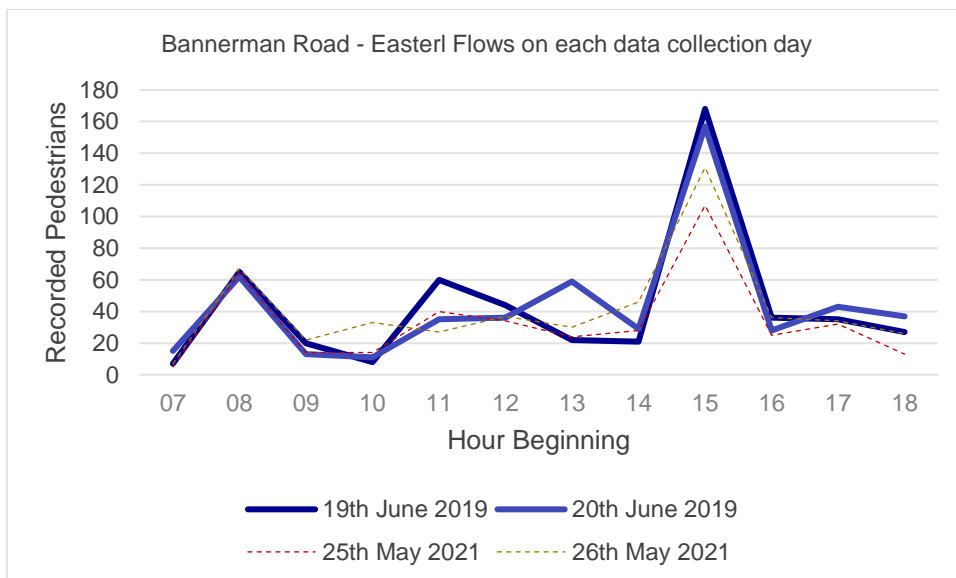


Chart 18: Bannerman Road – Easterly Pedestrian Movements, Base Line and Follow Up – Direction away from School



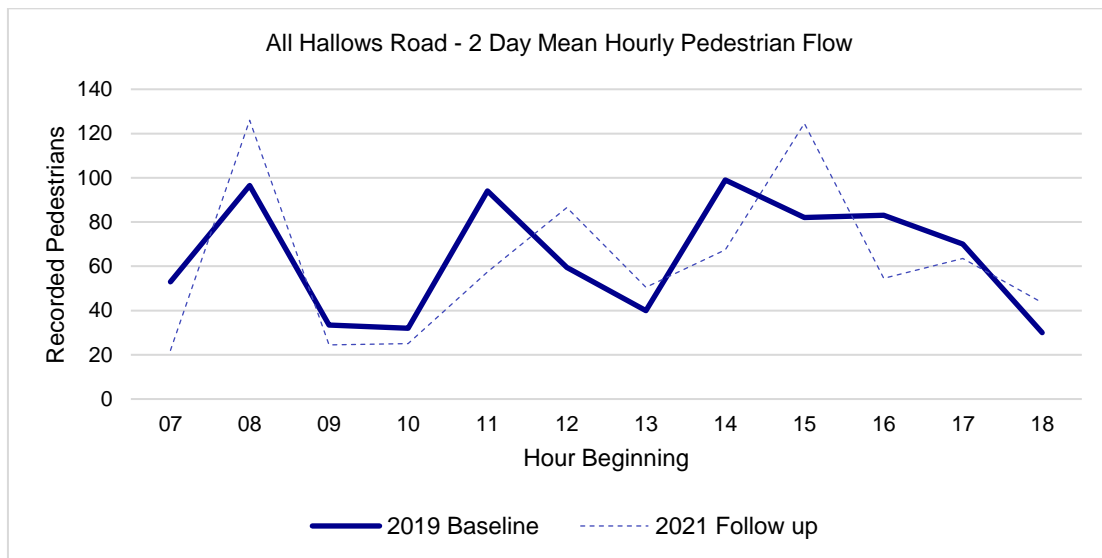
4.3.3.6 Walking Flows – All Hallows Road

Total volumes of walking on All Hallows Road recorded over the 12 hour period between 7am and 7pm saw a decrease between 2019 and 2021. In 2019 a total of 816 pedestrians were recorded on All Hallows Road. This level decreased by 9% to 746 pedestrians in 2021.

2019 AM school drop off (8am to 9am) pedestrian flows were 102 pedestrians. This increased by 24% in 2021, to 126 pedestrian movements recorded. PM school flows (3pm to 4pm) along All Hallows Road in 2019 were 127. In 2021, this remained broadly unchanged, with a marginal decrease of 2% to 125 pedestrian movements.

The combined 8am to 9am and 3pm to 4pm pedestrian flows along All Hallows Road in 2019 were 229, increasing slightly by 10% over the same period in 2021 to 251.

Chart 19: All Hallows Road Hourly Pedestrian Flow



Movement patterns relating to school peak time (8am to 9am and 3pm to 4pm) differ to Albion Road and Bannerman Road. With base line data, AM and PM peaks both approaching and moving away from the school being broadly the same.

Follow up data displayed a different pattern of movement, with both AM and PM peak movements being significantly higher towards the school than away from the school. It appears that during both AM and PM, parents are approaching the Frog Marsh entrance with children and all movements south along the street are indicative of parents without children.

Chart 20: All Hallows Road – Northerly Pedestrian Movements, Base Line and Follow Up – Direction to School

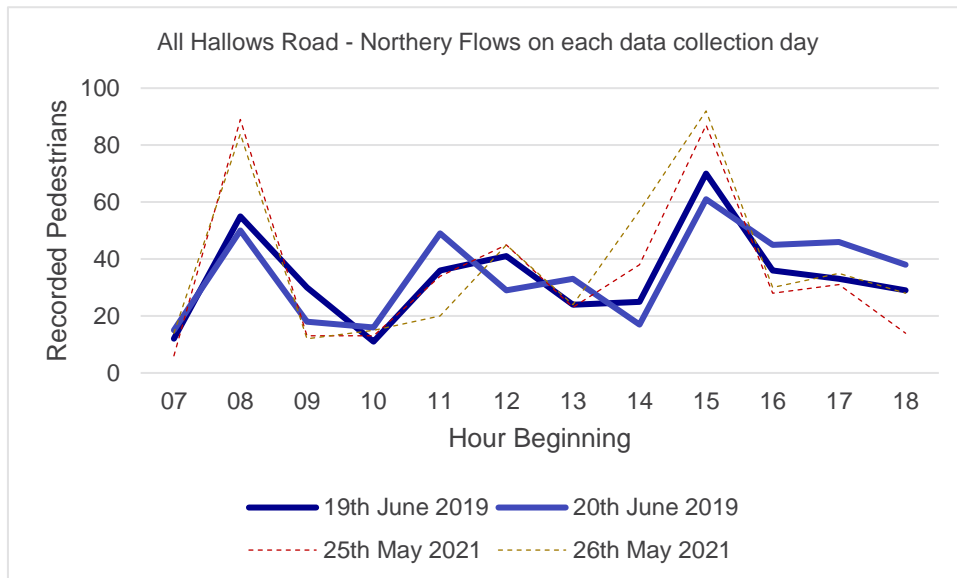
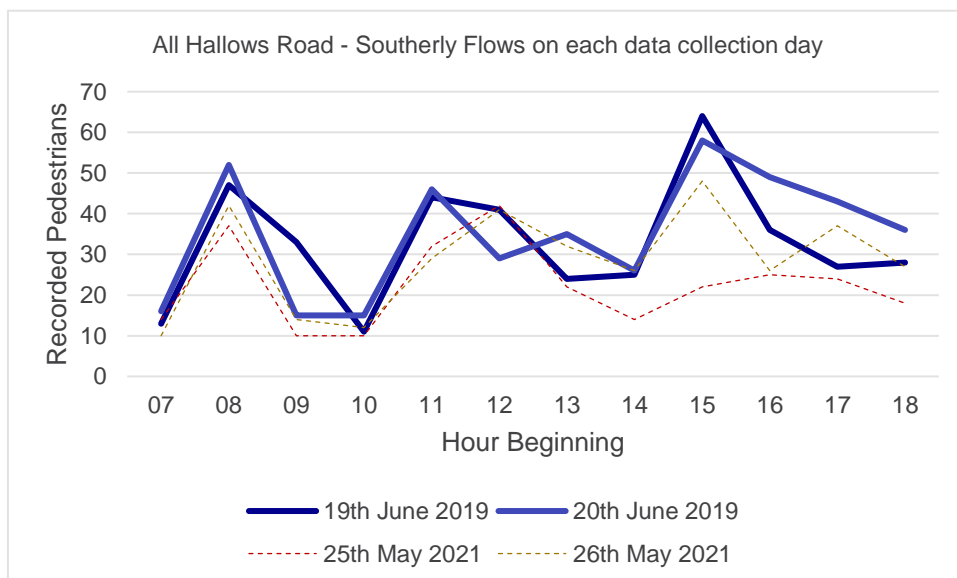


Chart 21: All Hallows Road – Southerly Pedestrian Movements, Base Line and Follow Up – Direction away from School



4.3.3.7 All Hallows Road Walking – Covid 19 Pattern Changes

COVID-19 has presented a number of challenges with a direct comparative analysis of pedestrian movements into and out of the school.

Social distancing

The requirement to provide social distancing and prevent crowding at school drop off and pick up times, resulted in many schools adopting changes to their drop off and pick up arrangements, with changes to entrances and exits at schools.

At the time of follow up video data collection, Bannerman Road School had implemented a one-way system, requiring parents to enter at the entrance closest to Frog Marsh bridge and then pass through the school site, and exit at one of two entrances/exits at the southern end of the site.

The introduction of the one-way system may provide an explanation for the change in pedestrian patterns along All Hallows Road. It may also have resulted in parents and children taking alternative routes to the school that were not captured at the camera recording positions.

Prior to the introduction of the one-way system, parents were able to enter, drop off children within the site and leave through the Frog Marsh entrance. With the introduction of the one-way system, parents were required to enter the school site at the Frog Marsh entrance, pass through the site and then leave through one of the southern exits. Therefore, parents dropping children off, who might have previously used one of the two southerly accesses to the school site, were now required to walk along All Hallows Road and enter through the Frog Marsh entrance. This might provide some explanation for higher numbers of pedestrians moving in a northerly direction at drop off time.

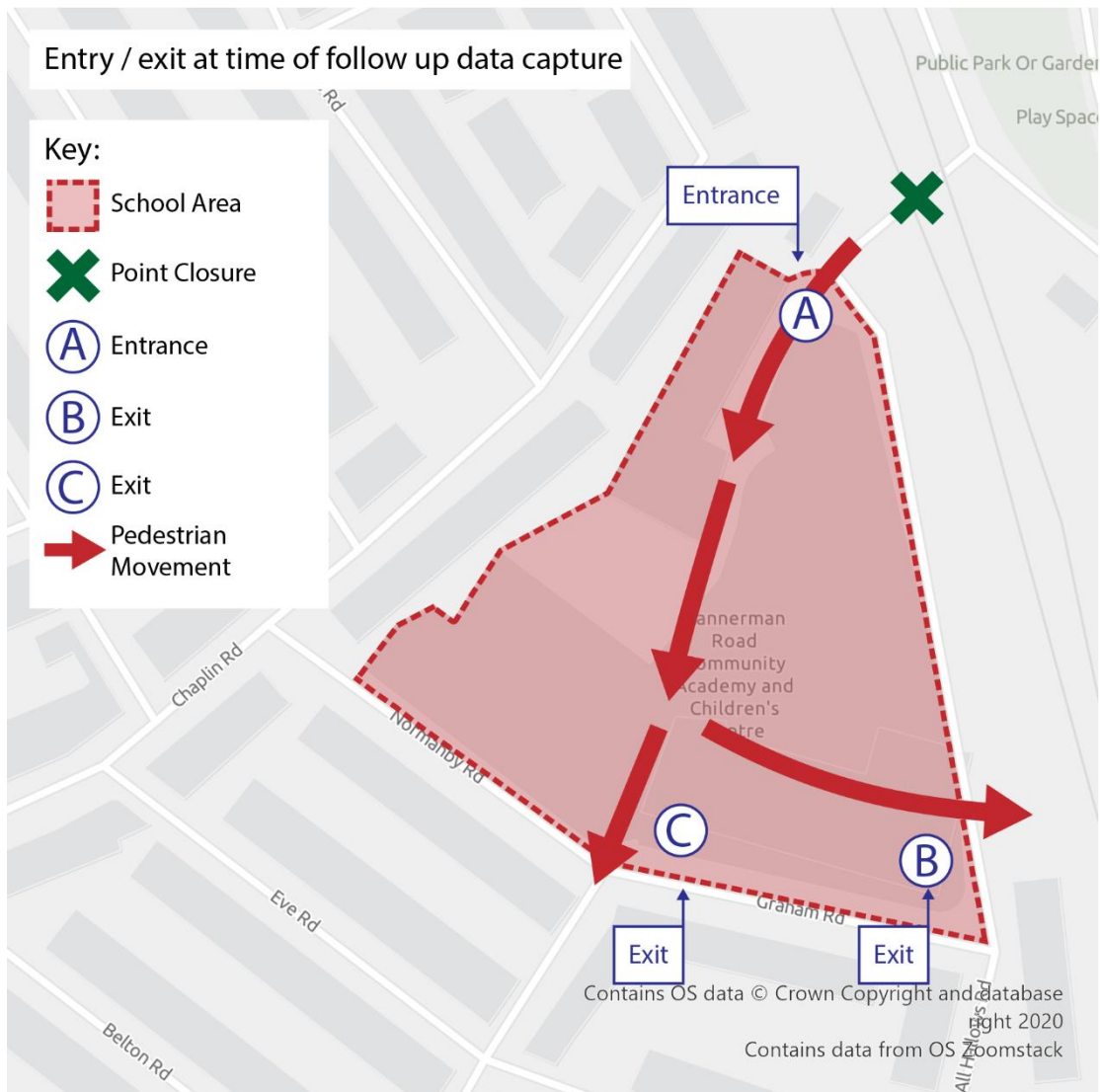
During the afternoon pick up, parents who may have collected and left through the Frog Marsh entrance, were now required to enter and collect their children entering through the Frog Marsh entrance, but then obliged to pass through the school site and leave through one of the southerly exits. If these parents then wanted to return home via Frog Marsh, they would need to walk along All Hallows Road in a northerly direction, back towards the Frog Marsh entrance.

Anecdotally, when discussing the one-way system with parents, it has been suggested that at the time of follow up data collection, the one-way system had been in place since the end of the first lock-down, around a year. Initially when it was introduced, enforcement was rigorous, but with time and the easing of restrictions, at the time of data collection, enforcement of the system was not as strict. Therefore, a number of parents may have been choosing the leave through entrance A and others may have been entering through exits B and C.

Figure 22: Entry / exit at time of baseline data capture diagram



Figure 23: Entry / exit at time of follow-up data capture diagram

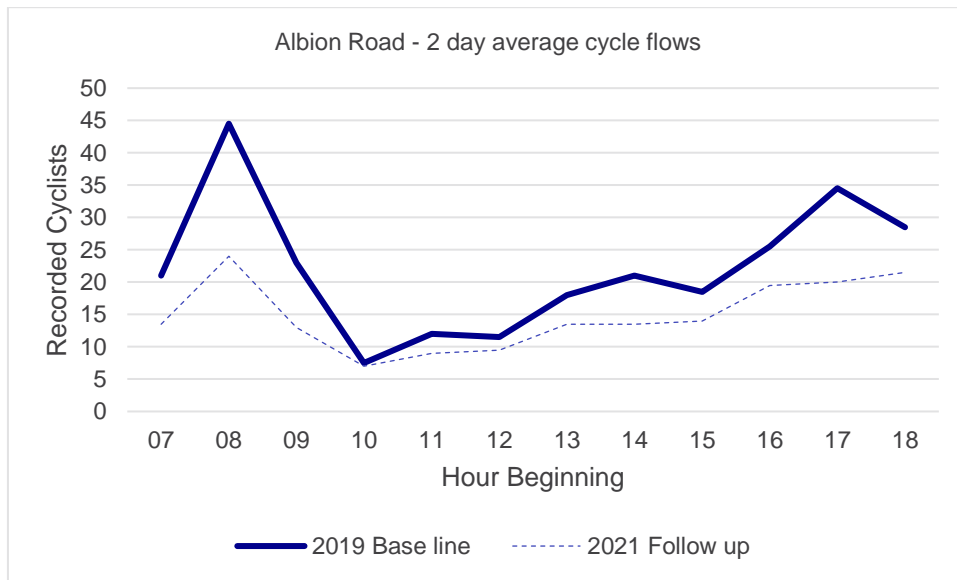


4.3.3.8 Cyclist Flows – Albion Road

Overall, cycling volumes on Albion Road reduced in the two years between 2019 and 2021. In 2019 there was a recorded total of 266 cyclists. This value fell by 33% in 2021 to a total number of 178 cyclists over the twelve hours.

Between 8am and 9am, there was a recorded total of 45 cyclists in 2019. This peak time value dropped by 33% in 2021 to a total value of 24 cyclists within the same period. School pick-up between 3pm and 4pm in 2019 recorded 19 cyclists and a 24% reduction in 2021 to 14 cyclists.

Chart 22: Albion Road Hourly Cycle Flows

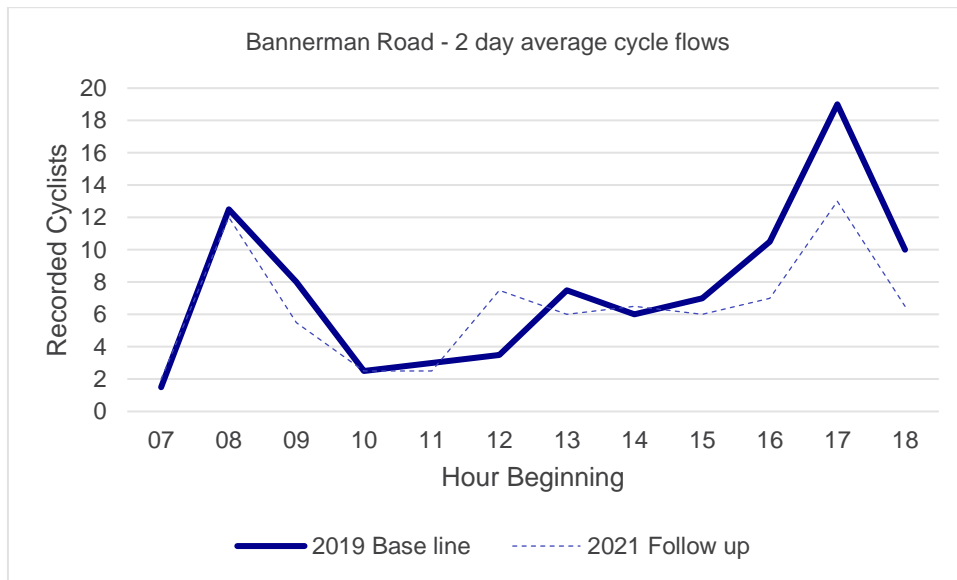


4.3.3.9 Cyclist Flows – Bannerman Road

Total volumes of cyclists on Bannerman Road passing under Frog Marsh reduced between 2019 and 2021. In 2019, a total of 91 cyclists were measured passing through Frog Marsh bridge compared to 77 in 2021 a drop of 15%.

AM and PM peaks were essentially unchanged. In 2019, 13 cyclists were recorded between the hours of 8am to 9am and in 2021, 12 cyclists. School pick-up between 3pm and 4pm in 2019 recorded 7 cyclists and in 2021, 6 cyclists during the same period.

Chart 23: Bannerman Road Hourly Cycling Flow

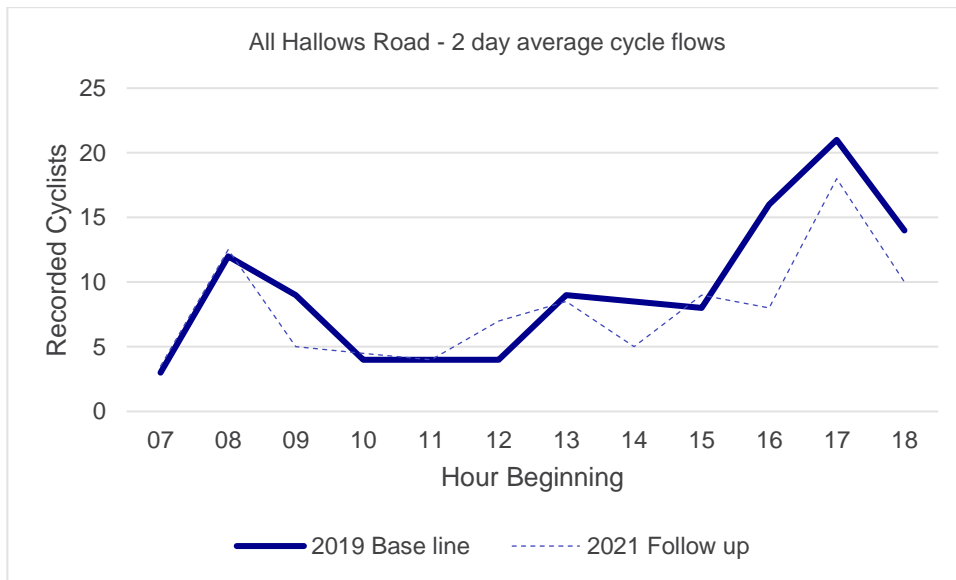


4.3.3.10 Cyclist Flows - All Hallows Road

All Hallows Road experienced a drop in cyclists between 2019 and 2021. In 2019, a total of 113 cyclists were recorded compared to 95 in 2021 a reduction of 16%.

AM and PM peaks were also not significantly changed. In 2019, 12 cyclists were recorded between the hours of 8am to 9am. In 2021, the number was 13. School pick-up between 3pm and 4pm in 2019 recorded 8 cyclists and in 2021, 9 cyclists.

Chart 24: All Hallows Road Hourly Cycling Flow

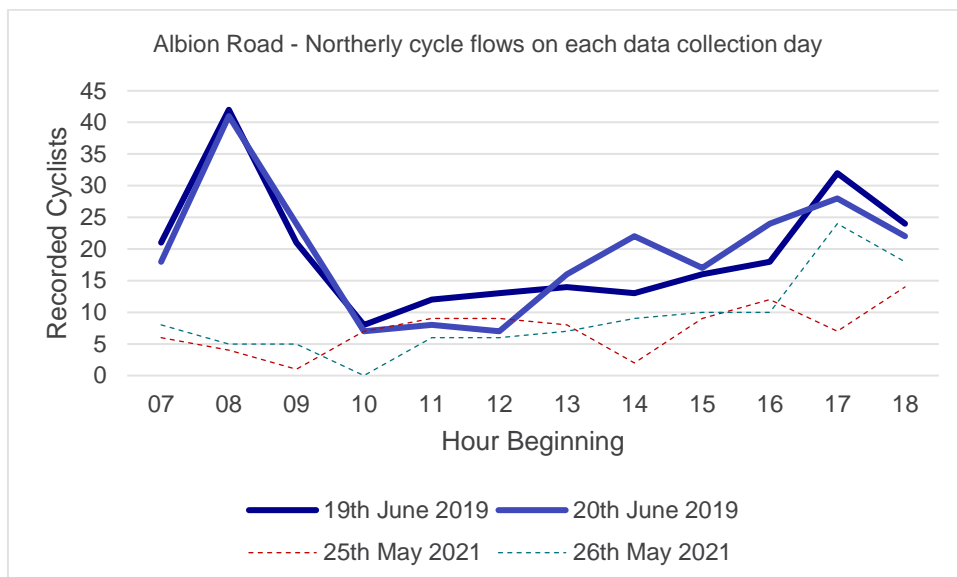


4.3.3.11 Covid 19 - Changes in Cycling Patterns

Whereas cycling patterns through the day appear to be relatively unchanged, where there appears to be notable difference, is during hours normally associated with commuting to and from work.

Looking at individual northerly flows along Albion Road, the lack of spike between 8am and 9am, is notable. Neither of the days of follow up data shows any form of peak AM spike, although data recorded on 26th May 2021, indicates a rise in numbers between 5pm and 6pm. It might be considered that a reduction in cyclists, might in part at least, be attributed to an increase in people working from home.

Chart 25: Albion Road - Northerly Cycling Flows – Note the lack of AM peak at follow up.



4.3.3.12 Walking and Cycling Flows Summary

Pedestrian numbers recorded by this study, would indicate that footfall remains largely unchanged. Providing a direct comparative analysis of walking data sets captured before and during the COVID-19 pandemic, is difficult. With the exception perhaps of Albion Road, there is evidence that walking patterns have been impacted directly by changes to entry and exit arrangements at the school and possibly by relatively high numbers of people needing to self-isolate.

Average numbers of pedestrians recorded across all 3 sites increased marginally, by 3% from 2691 in 2019 to 2776 in 2021. Consistent with this relatively unchanged picture of pedestrian numbers, the total two day average of pedestrians recorded across both AM and PM peak school times, rose marginally from 940 in 2019 to 962 in 2021; an increase of 2%.

However, there is evidence that movement patterns have changed as a result of COVID-19 and the implementation of a one-way system at the school. Pedestrian movement on the streets peripheral to the school, particularly the one-way system exit points, were not recorded. Whether people have chosen to take alternative routes to and from school and ultimately how this has affected footfall pedestrian numbers to and from the school, is unclear.

Cycling numbers have seen a broad reduction across the sites monitored from a total 2 day average of 469 in 2019 to 350 in 2021. This represents a reduction of 25%. This drop in numbers is also seen at both AM and PM school peak times. The total 2 day school AM and PM average across all 3 sites in 2019 was 103. This dropped by 24% in 2021 to 78.

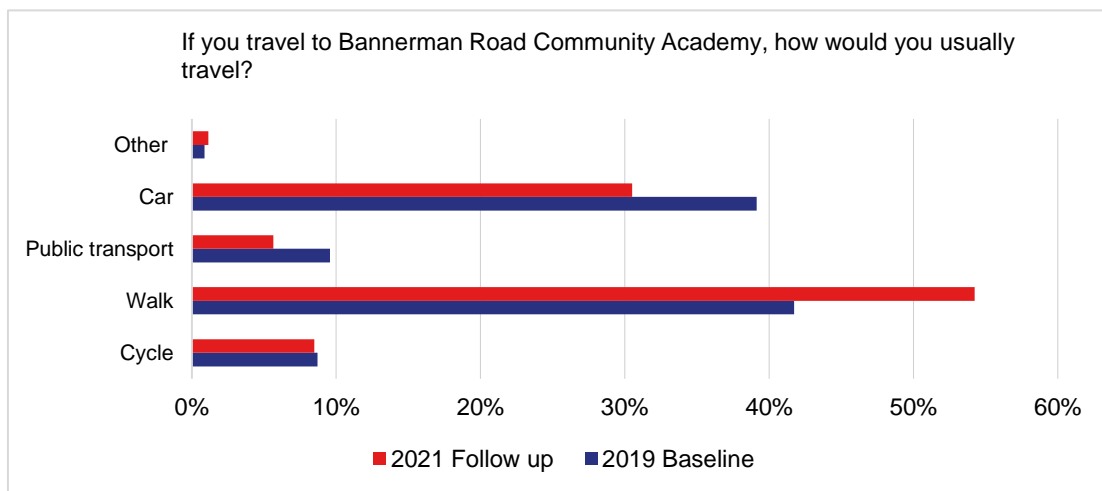
The biggest single reduction in cycling numbers was seen between 8am and 9am on Albion Road, with a recorded 46% drop in cyclists from 45 in 2019 to 24 in 2021. This in part might be attributable to the increase in home working and the cycling as a method of transport is likely to be higher among adults than infant and primary aged children.

4.3.4 Survey Response – School Run Modal Choice

4.3.4.1 School Run Travel Mode Choice

Residents were asked, “If you travel to Bannerman Road Community Academy, how would you usually travel?” From the 2019 baseline survey, 58 respondents out of 115 (50%) total responses said they would usually travel to the school by either walking or cycling, as demonstrated in Chart 26. In the 2021 follow-up survey, 111 out of 177 (63%) responded that they would travel to the school by either walking or cycling. Comparatively, there was a 9% increase in active travel modal choice between the baseline and follow-up data, with an 8% decrease in responses of those saying that they would choose to travel by car to the school. The proportional increase in active travel modal choice only increased in walking; those saying that they would cycle to the school remained approximately the same at 8%.

Chart 26: Usual transport mode to Bannerman Road Community Academy



4.4 Changing Attitudes

4.4.1 Objectives

To capture how public perception and sentiment towards the road closure has changed over time.

The closure of roads is typically considered to be highly contentious within the communities it affects. Prior to the closure of the junction between All Hallows Road and Albion Road, a number of other junctions within Easton had also been suggested by Bristol City Council for closure. Community objections resulted in the council deciding to withdraw these other proposals. A considerable level of objection was also raised to the All Hallows Road and Bannerman Road closure, however support of the proposal by the Friends of Bannerman Road group provided sufficient grounds for the council to continue and implement the closure.

An aim of this project is to understand if the negative attitudes to road closures change over time following their implementation.

4.4.2 Metrics

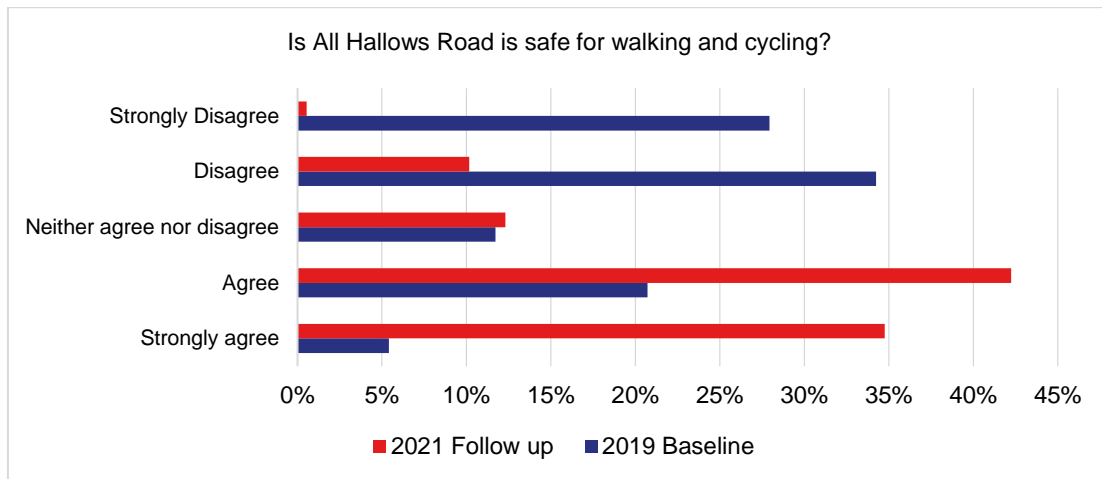
- A number of questions were included in both the base line and follow up surveys with the intent of capturing a number of aspects relating to support for the junction closure, the design and the co-design approach taken.

4.4.3 Survey Analysis – Perception of Road Safety

4.4.3.1 Perceived Safety on All Hallows Road

Perceptions of safety have been evidenced to have changed between the collections of base line and follow up data. In 2019, a total of 69 out of 111 (62%) respondents either disagreed or strongly disagreed with the statement “All Hallows Road is safe for walking and cycling” as seen in Chart 27. In contrast, when asked the same question again in 2021, 144 (77%) of respondents agreed or strongly agreed that All Hallows Road was safe for walking and cycling compared to only 26% of people agreeing with the statement in 2019.

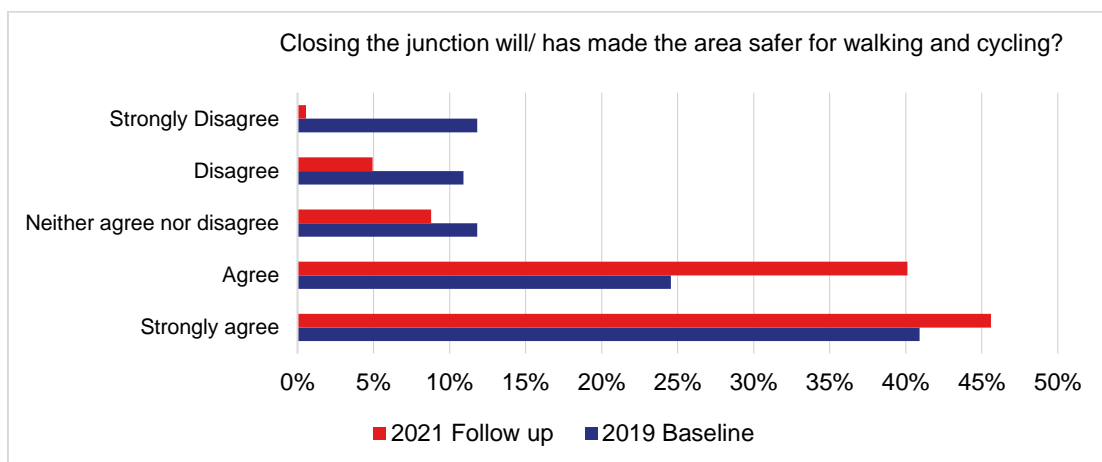
Chart 27: All Hallows Road perception of safety



4.4.3.2 Perceived Effects of the Point Closure Regarding Safety

The majority of survey respondents agreed that closing the junction has improved safety. A total of 72 out of 110 (65%) in 2019 thought closing the junction would make the area safer for walking and cycling. In 2021, this majority increased from 65% to 86%, with only 10 out of 186 respondents disagreeing or strongly disagreeing that closing the junction did not positively affect walking and cycling safety in the area.

Chart 28: Safety perceptions following the point closure

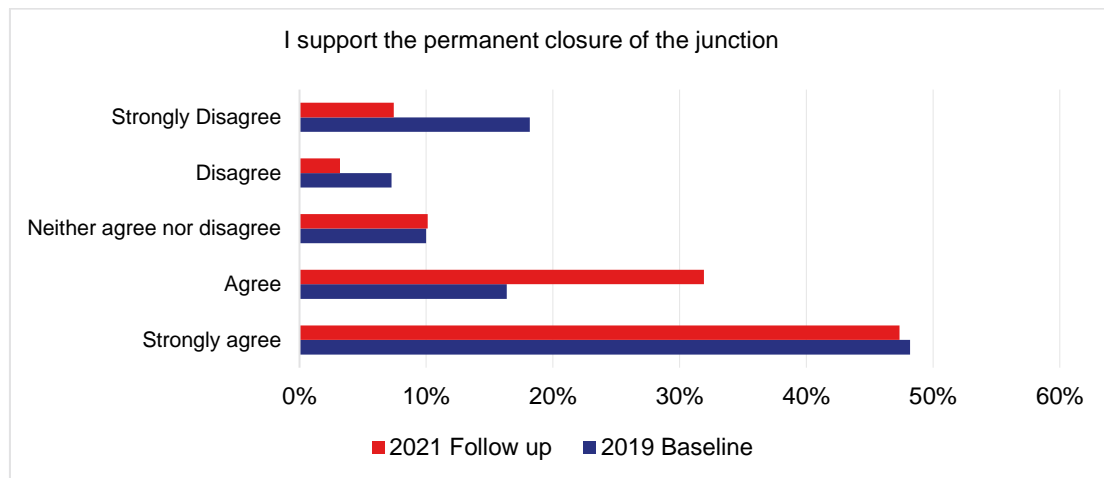


4.4.4 Survey Analysis – Level of Support

4.4.4.1 I Support the permanent closure

When asked in 2019 if they agree with the following statement: “I support the permanent closure of the junction”, 64% of respondents agreed or strongly agreed. While there was evidence of support for the closure in 2019, 25% of respondents disagreed or strongly disagreed with the statement. When asked again in 2021, the percentage of people disagreeing with the statement decreased to 10%, whilst support for the closure with respondents either agreeing or strongly agreeing, increased to 79%.

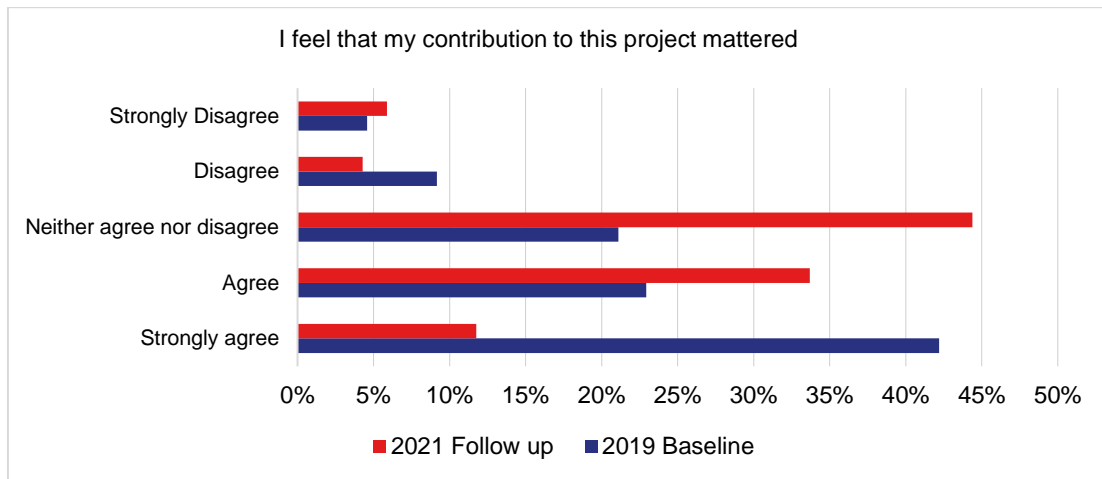
Chart 29: Local support for the closure



4.4.4.2 My contribution matters

While the survey responses show an apparent proportional increase in favour of the closure, the picture of how important the respondents felt their contributions mattered were less clear. When asked in 2019 if they agreed with the following statement: “I feel that my contribution to this project mattered”, 42% of respondents strongly agreed with the statement. In 2021 when asked to again, there was a significant drop to 12% of those strongly agreeing. While there was a slight decrease in those disagreeing that they did not think their contribution mattered, there was no significant change in the responses. In 2021 the respondents still felt that their contributions to the project mattered. However, feeling shifted from strongly agreeing to agree. Those with neutral feelings remained largely the same.

Chart 30: Perceived significance of participant contributions

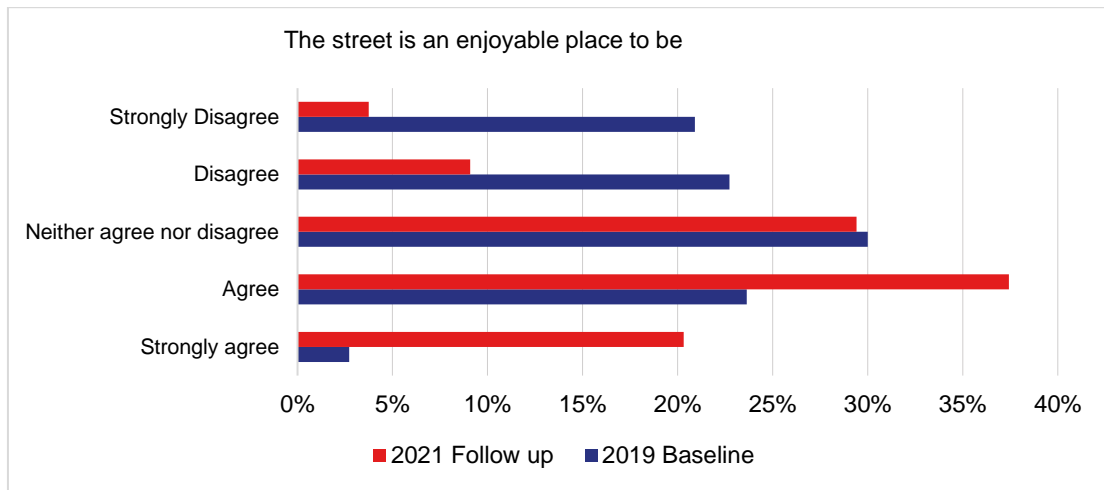


4.4.5 All Hallows Road – Changing Perceptions

4.4.5.1 The street is an enjoyable place to be

There was a considerable shift in views between 2019 and 2021 when asked if: “The street is an enjoyable place to be”. In 2019, most respondents did not agree with the statement. 3 out of 110 responses strongly agreed, and 26 (24%) agreed with the statement. In contrast, when asked again in 2021, those who disagreed or strongly disagreed fell from a total of 44% in 2019 to 13% in 2021. The aggregated sum of those who agreed or strongly agreed with the statement in 2019 totalled 27% which increased in 2021 to 57%. Over the two years, there is evidence that respondents perceived a noticeable change to All Hallows Road and experienced the street as a more enjoyable place to be. Increased enjoyment of the space may have contributed to more respondents saying they would walk to the school in 2021.

Chart 31: Respondents enjoyment of All Hallow Road

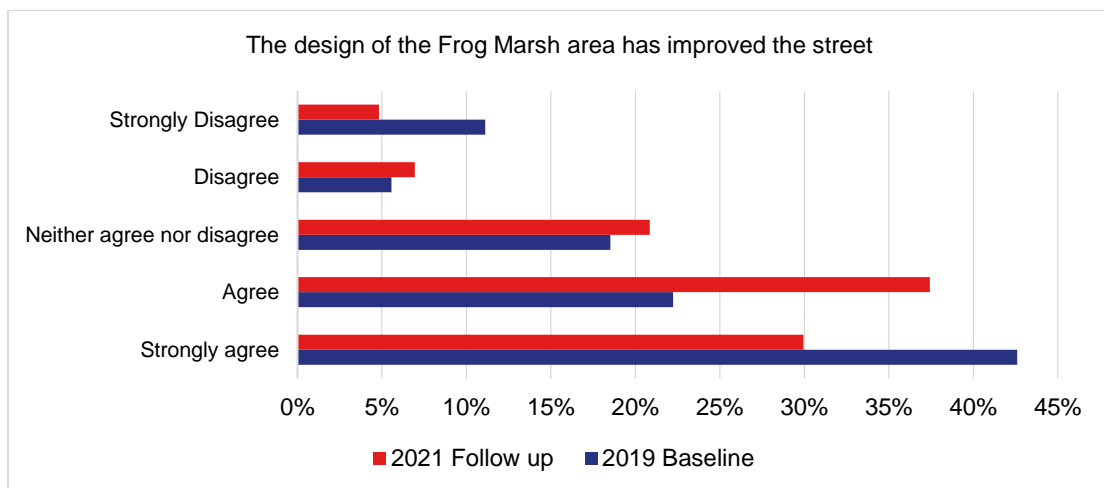


4.4.5.2 The design of Frog Marsh has improved the area

In 2019, 65% of participants either agreed or strongly agreed that the design of Frog Marsh improved the area. This saw a marginal increase to 67% in 2021. In 2019, 17% disagreed with the statement, whereas this reduced to 12% in 2021.

As with the degree to which participants felt their contribution mattered, the feeling that the scheme represented an improvement shifted from strongly agreeing to agreeing, with 43% strongly agreeing in 2019, reducing to 30% in 2021.

Chart 32: Views on the design of Frog Marsh



4.4.6 Additional Respondent Comments

When asked to provide any other comments during the 2021 follow up, respondents were split on various aspects of the closure. While most supported the scheme on the whole, numerous respondents continued to not support the closure, listing concerns including:

- The closure of the junction causing more congestion in the greater area.
- Frog Marsh attracting anti-social behaviour including drug dealing, alcohol consumption, littering, and graffiti.
- Design issues, particularly around the colour scheme and maintenance of the site.

A number of positive comments provided alternative opinion to the previous negative comments:

- How the closure has eased congestion in the greater area.
- How Frog Marsh has made walking and cycling feel safer in Easton.
- Fondness of the colour scheme and design of the intervention.

Many respondents showed support for the scheme as a whole but made comments of improvements they would like to see, including:

- What will be done to maintain the site in the future? Many noted that the blue paint was quickly degrading.
- That the site should include greener and nature-based features.

4.4.7 Changing Perceptions Summary

Evidence shows broad support in 2019 for the junction closure with a strong level of sentiment that it would represent an improvement in road safety within the area. Strength of support for the scheme and agreement that it represents an improvement to safety within the area has been evidenced to have grown since 2019. However, there is some nuance within this as seen by the shift in agreement relating to the design, and importance of resident contribution.

5. Discussion

The evidence captured during this process has shown that the closure of the junction between All Hallows Road and Albion Road has had a number of impacts on traffic behaviour and public perception. Evidence appears to show no increase in walking levels, although the impacts of COVID-19 and the implementation of a one-way system at the school are likely to have changed pedestrian movement patterns which the study was not able to record. Cycling numbers appear to have reduced, although the higher levels of home working and reduced commuter flows, may have had an impact on this.

This study assesses data gathered using a range of techniques to validate the research aims presented in the first section. Unforeseen at the outset of the project, the COVID-19 pandemic has had a profound social impact, changing travel behaviour in a way that makes a direct comparison between pre and post COVID-19 outbreak difficult. As a result of COVID-19, the lock-down and closure of schools, collection of follow up data was postponed by a year until society, and schools, began to re-open. However, despite evidence that traffic had returned to pre-pandemic levels at the time of follow up data collection (TTF, 2021), the continuing impact of COVID-19, such as levels of home working, on-going infection rates, social distancing and restrictions on group activities, make a direct pre and post COVID-19 comparison challenging.

This section of the report will consider in turn, the questions that the report is attempting to answer and provide a discussion around each.

The questions that this report has attempted to answer are:

- **Has traffic been displaced to other streets around the school as a result of closing the junction between Bannerman Road and All Hallows Road?**
- **Does the new junction closure represent an improvement in road safety?**
- **Have levels of walking and cycling to the school increased as a result of the road closure?**
- **How have public perceptions and sentiment towards the road closure changed following construction?**

5.1 Summary of data

Table 9: Key changes in vehicle in volumes, speeds, pedestrian and cycle volumes across each site measured. Positive changes shown in green, negative changes shown in red.

Albion Road – walking and cycling, traffic volumes and speeds		
School time traffic volume (combined 8am – 9am & 3pm – 4pm)	254	140 ↓
85 th percentile speed	12mph	14mph ↑
Pedestrians (combined 8am – 9am & 3pm – 4pm)	272	341 ↑
Pedestrians (total 7am to 7pm)	840	1127 ↑
Cyclists (combined 8am – 9am & 3pm – 4pm)	63	38 ↓
Cyclists (total 7am to 7pm)	266	178 ↓
Bannerman Road – walking and cycling		
School time traffic volume (combined 8am – 9am & 3pm – 4pm)	N/A	N/A
85 th percentile speed	N/A	N/A
Pedestrians (combined 8am – 9am & 3pm – 4pm)	440	371 ↓
Pedestrians (total 7am to 7pm)	1036	904 ↓
Cyclists (combined 8am – 9am & 3pm – 4pm)	20	18 ↓
Cyclists (total 7am to 7pm)	91	77 ↓
All Hallows Road – walking and cycling, traffic volumes and speeds		
School time traffic volume (combined 8am – 9am & 3pm – 4pm)	243	20 ↓
85 th percentile speed	17mph	8mph ↓
Pedestrians (combined 8am – 9am & 3pm – 4pm)	229	251 ↑
Pedestrians (total 7am to 7pm)	816	746 ↓
Cyclists (combined 8am – 9am & 3pm – 4pm)	20	22 ↑
Cyclists (total 7am to 7pm)	113	95 ↓

Traffic volume – Surrounding streets		
Normanby Road (combined 8am – 9am & 3pm – 4pm)	77	97 ↑
Normanby Road (total 7am to 7pm)	375	362 ↓
Chaplin Road (combined 8am – 9am & 3pm – 4pm)	65	88 ↑
Chaplin Road (total 7am to 7pm)	310	409 ↑
Graham Road (combined 8am – 9am & 3pm – 4pm)	112	78 ↓
Graham Road (total 7am to 7pm)	450	255 ↓
Albion Road (combined 8am – 9am & 3pm – 4pm)	254	140 ↓
Albion Road (total 7am to 7pm)	1222	781 ↓
All Hallows Road (combined 8am – 9am & 3pm – 4pm)	243	20 ↓
All Hallows Road (total 7am to 7pm)	1140	64 ↓

Table 10: Perception survey results. Positive changes shown in green, negative changes shown in red.

Closing the junction will make / has made the area safer for walking and cycling					
	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Pre (113 responses)	45%	27%	13%	12%	3%
Post (189 responses)	46%	40%	9%	5%	1%
Strongly Agree/Agree			Strongly Disagree/Disagree		
↑ by 14%			↓ By 9%		
I feel that my contribution to this project mattered					
	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Pre (113 responses)	42%	23%	21%	9%	5%
Post (189 responses)	12%	34%	44%	4%	6%
Strongly Agree/Agree			Strongly Disagree/Disagree		
↓ by 19%			↓ By 4%		

The design of the Frog Marsh area has improved the street					
	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Pre (113 responses)	43%	22%	19%	6%	11%
Post (189 responses)	30%	37%	21%	7%	5%
Strongly Agree/Agree			Strongly Disagree/Disagree		
↑ by 2%			↓ by 5%		
The Street is an enjoyable place to be					
	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Pre (113 responses)	3%	24%	30%	23%	21%
Post (189 responses)	20%	37%	29%	9%	4%
Strongly Agree/Agree			Strongly Disagree/Disagree		
↑ by 30%			↓ by 31%		
If you travel to Bannerman Road Community Academy, how would you usually travel?					
	Cycle	Walk	Public Transport	Car	Other
Pre (113 responses)	9%	42%	10%	39%	1%
Post (189 responses)	8%	54%	6%	31%	1%
All Hallows Road is safe for walking and cycling					
	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Pre (113 responses)	5%	21%	12%	34%	28%
Post (189 responses)	35%	42%	12%	12%	1%
Strongly Agree/Agree			Strongly Disagree/Disagree		
↑ by 51%			↓ By 51%		
I support the permanent closure of the junction					
	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Pre (113 responses)	48%	16%	10%	7%	18%
Post (189 responses)	47%	32%	10%	3%	7%
Strongly Agree/Agree			Strongly Disagree/Disagree		
↑ by 15%			↓ By 15%		

5.2 Traffic Displacement

Has traffic been displaced to other streets around the school as a result of closing the junction between Bannerman Road and All Hallows Road?

Evidence has shown that traffic flows related to the school run have changed on the various approach roads around the school and do show some signs of traffic displacement resulting from the closure of the junction between All Hallows Road and Albion Road.

All Hallows Road saw a significant reduction in traffic volumes, with an aggregated sum of a 92% reduction in vehicle traffic at drop off and pick up times.

However, Chaplin Road and Normanby Road approaches to the school have experienced increases particularly at pick up time (3pm to 4pm) of 71% (22 cars) and 36% (13 cars) respectively. Aggregated sums at drop off and pick up time traffic for each of these are a 36% increase (23 cars) on Chaplin Road and a 25% increase (20 cars) on Normanby Road.

The overall traffic picture, however, is more complex and would suggest that the displacement experienced at Graham Road and Normanby Roads could be offset by the overall reduction in traffic recorded around the perimeter of the school. As an aggregated figure on all approaches to the school, traffic volumes dropped by 53% (227 cars) between 8am and 9am in the mornings and 31% (101 cars) between 3pm and 4pm in the afternoon.

Except for Chaplin Road, which experienced a daily average rise in traffic volumes of 32% (98 cars), all the data collection points recorded decreases in traffic throughout the day. The comparative overall reduction between 7am and 7pm across all locations was 47% (1627 cars).

It is likely that other factors, particularly the COVID-19 pandemic is likely to have affected traffic behaviour and volumes and therefore influenced these figures. The increase in people now working from home is also likely to have had an impact on vehicle flows through the area.

Perceptions captured through the survey indicate a significant drop in sentiment that the streets surrounding the school are now congested with a 31 percentage point reduction in survey respondents now strongly agreeing or agreeing with the statement 'the surrounding streets are congested'. However, this swing in sentiment appears to have moved more towards ambivalence rather than disagreeing with the statement as those either strongly

disagreeing or disagreeing with the statement has remained broadly the same, with a 1 percentage point increase.

5.3 Improved Road Safety

Does the new junction closure represent an improvement in road safety?

The evidence would suggest that the closure of the junction between All Hallows Road and Albion Road has contributed to some improvements in road safety within the area.

The previous section considered traffic flows and discussed that reduced vehicle flows have been experienced on a number of the streets around the school, particularly at the entrance on Bannerman Road close to Frog Marsh bridge. Bannerman Road, All Hallows Road, Albion Road and Graham Road, have all seen reductions in traffic. Normanby and Chaplin Road have both experienced increases in traffic volumes during school drop off and pick up times.

All Hallows Road, which has experienced the largest reduction in traffic volume, has also seen a large reduction in vehicle speeds, from 17MPH to 8 MPH 85th percentile. Speeds on Albion Road would appear to have increase marginally (12MPH to 14MPH 85th percentile), but traffic flows were recorded to have reduced by 36% (from 1222 to 781 cars 7am to 7pm). This still represents an environment that Active Travel Design Guidance LT/N 1/20 (Department for Transport, 2020) consider to be well within the criteria for an on-carriageway shared cycling environment.

Of the three other roads monitored, Graham Road and Normanby Roads also experienced recorded drops in speed, with Chaplin Road seeing a slight increase with 85th percentile speeds increasing from 19MPH to 23MPH.

Changes in footfall, cycling and school travel patterns are discussed in the next section, but AM peak school trips remained broadly unchanged under Frog Marsh bridge and saw an increase along All Hallows Road. PM school trips fell by 31% under Frog Marsh bridge but remained broadly unchanged along All Hallows Road. There was a 13% (132) reduction in walking trips across the day under Frog Marsh bridge and a 9% (71) drop along All Hallows Road. Changes to the school entry and exit system are likely to have had an impact on walking patterns to and from the school. Perceptions of safety, however, were also captured from the surveys, relating to anti-social behaviour and it should also be noted that outside of school opening times, there is little active frontage along All Hallows Road. Although several

comments raised concerns about a rise in anti-social behaviour at Frog Marsh, sentiment captured through the perception survey suggests that those questioned consider the junction closure to have improved safety within the area.

Cycling numbers dropped by 25% across all 3 sites throughout the day and 24% at school times. However, patterns outside of peak commute times appear broadly unchanged, indicating fewer commuters during the COVID-19 pandemic rather than any specific impact, either positive or negative, resulting from the closure.

The use of AI cameras allowed pedestrian movements to be tracked within the area around the Frog Marsh closure. It was observed that when passing under the bridge, pedestrians now use the whole of the available space rather than being forced onto the narrow footway. There is also evidence that the seating and table area are used as areas to dwell. There are some differences in the dominance of pedestrians, from one side to the other of the bridge, however comparatively there is evidence that behaviour has changed on both sides and pedestrians are using the space or crossing in a more informal manner.

On All Hallows Road, although still appearing to prefer the footway, the AI cameras have captured a general propensity to use the whole of the carriage way between the bridge and school entrance. The ratio of vehicles to pedestrians during the school drop off and pick up has shifted from broadly equal in 2019 (173 cars to 179 pedestrians) to pedestrians significantly outnumbering vehicles in 2021 (39 cars to 251 pedestrians). Could this be representing something close to a critical mass and therefore allowing pedestrians to begin to dominate ownership of the space? In any case, evidence would appear to suggest that a significant number of pedestrians feel sufficiently safe to share the carriageway at the top end of All Hallows Road with vehicles.

Changes in behaviour on Albion Road are less profound, however, images of filtered pedestrian movement entering and exiting Frog Marsh and crossing Albion Road provide some evidence that pedestrians are crossing along a broader area of Albion Road. From images captured, it would appear that pedestrians are stepping between the line of bollards positioned along the entrance of the tunnel and commonly crossing along the broad length of the road in front of the bridge. Previously, crossing behaviour appeared to be almost entirely restricted to the courtesy crossing points at either side of the bridge.

Although speeds along Albion Road have been evidenced to have increased slightly, speeds and volumes, as previously discussed, remain relatively low. The removal of the live carriageway from under the bridge, thereby simplifying the road layout and allowing pedestrians to more easily predict approaching traffic movements, may in part have contributed to an environment in which pedestrians feel able to cross more informally.

5.4 Modal Shift

Have levels of walking and cycling to the school increased as a result of the road closure?

Considered as an average across all three locations recorded, walking both at school pick up and drop off and across the whole day appear to be relatively unchanged. A total of 940 base line walking trips were recorded at school pick up and drop off times, with this rising slightly (2%) to 962 during follow up. Across the whole day, 2691 trips were recorded at base line and 2776 (3% increase) at follow up.

Comparatively however, across all three locations, total vehicle trips saw significant reductions both across the day and at school peak times. A total 2362 vehicles were recorded at base line, falling to 845 (64% reduction) at follow up. At school peak times, 496 vehicles were recorded at base line, falling to 160 (68% reduction) at follow up.

Albion Road experienced an increase in footfall throughout the 7am to 7pm recorded period. Footfall recorded passing under Frog Marsh bridge however was recorded to have dropped by 13% from 1036 to 904 trips throughout the day. Footfall at morning drop off appears to be largely unchanged, but pedestrians recorded passing under the bridge at pick up time had reduced by 31% from 226 to 155.

All Hallows Road also experienced a reduction in footfall across the day, from 816 to 746 (9% drop), but school directional travel patterns appear to have changed and AM peak saw a 24% increase in footfall (from 102 to 126), but PM peak remained broadly unchanged (from 127 to 125).

COVID-19 and the introduction of a one-way system is likely to have, in part, contributed to the changing travel patterns around school pick up and drop off. Exit points, not captured by cameras, were introduced as part of the one-way system, which may have resulted in parents changing their routes to and from school and making a direct comparison of base line and follow up data difficult.

The school have confirmed that at the time of follow up AI data capture, there were no whole class or year group absences as a result of COVID-19, however it is likely that there would be higher instances of individual absences due to self-isolation.

Other factors may have contributed to changes in footfall through Frog Marsh bridge and along All Hallows Road. Outside of the school day, the reduction in natural surveillance

caused by reduced traffic flows may contribute to perceptions of anti-social behaviour underneath the bridge.

Numerous comments relating to an increase in anti-social behaviour were captured. Although several comments raised concerns about a rise in anti-social behaviour at Frog Marsh, sentiment captured through the perception survey suggests that those questioned consider the junction closure to have improved safety within the area.

Cycling through Frog Marsh bridge and along All Hallows Road during school drop off and pick up times has remained broadly the same with 1 less trip (from 13 to 12) recorded through Frog Marsh between 8am and 9am and 1 more trip (from 12 to 13) along All Hallows Road. The PM school pick up time experienced a similar level of change, with 1 trip difference between base line and follow up.

Cumulatively across the day, a similar pattern is seen along Bannerman and All Hallows Road, with slightly larger differentials around PM commuter times. The difference around commuter times were more profound on Albion Road, with a 46% (45 to 24) drop in cycling numbers between 8am and 9am and a 42% drop (35 to 20) between 5pm and 6pm.

Cycling trips may be more closely associated with the adult commute, rather than trips to school by infant and primary aged children. This is reflected in perception survey responses at both base line and follow up, where when asked about usual modal choice for travelling to the school, 9% (base line) and 8% (follow up) of respondents said cycle, whereas 42% (base line) and 54% (follow up) of respondents said walking.

Results from the survey would appear to corroborate a higher propensity for walking, with a 29 percentage point increase in the numbers of people saying they would now walk to Bannerman Road Community Academy. Those saying they would now drive or cycle both dropped, with a 21 percentage point reduction in people saying they would now drive and an 11 percentage point reduction in people saying they would now cycle.

5.5 Public Perception

How have public perceptions and sentiment towards the road closure changed following construction?

There is some evidence to suggest that attitudes towards the junction closure have changed in the two years between 2019 and 2021, with a greater number of respondents now supporting the closure. It should be noted however, that sentiment captured through the base line surveys provided some evidence of broad support to the intervention prior to installation, with 64% of respondents either supporting or strongly supporting the closure as opposed to only 25% of respondents not supporting the closure.

In 2021 however, survey responses indicated an increasing level of support, with 79% of respondents supporting the closure and only 10% of respondents not supporting the closure.

There is some evidence to suggest that support for the design and sense of ownership are less strong. Those who strongly agree that the design has improved the area have reduced from 43% to 30%. However, the aggregated figure of those strongly agreeing and agreeing has risen by 2 percentage points from base line and those disagreeing that the design has improved the area has fallen by 5 percentage points from base line.

The shift in the number of people who feel their contribution has mattered is more dramatic, with 42% strongly agreeing in 2019 compared to 12% in 2021. The shift to those just agreeing (rather than strongly agreeing) has seen a rise, but the aggregated figure of those agreeing and strongly agreeing has dropped by 19 percentage points in 2021. Those strongly disagreeing has remained broadly similar, however those just disagreeing has dropped by 5 percentage points. A significant amount of people in 2021 appear ambivalent, neither agreeing nor disagreeing.

The shifting sentiment away from strong support for the design and sense of ownership or empowerment through contribution to the project, might suggest that the phenomenological impact of implementing and allowing people to experience a design is perhaps more important in garnering support, than delivery through engagement. It would be useful to have a control site as a comparison, to better understand how process impacts on sentiment. It should also be remembered that one of the catalysts for the Frog Marsh project was community engagement and that the project itself began with a high level of community empowerment. How sentiment might look within a different context and a more disenfranchised community warrants further study.

6. Conclusion

This study attempted to answer a number of questions related to the closure of the junction between All Hallows Road and Albion Road in the Easton area of Bristol.

The impact of the COVID-19 pandemic on traffic and travel behaviour makes a pre COVID-19 and post COVID-19 comparison difficult. The Transport Technology Forum (TTF) estimated that in the week commencing 31st May 2021 (following completion of post-intervention monitoring), overall traffic had returned to the pre-pandemic baseline, with levels varying between 3% below the baseline to 3% above the baseline levels from previous years (TTF, 2021). However, given changing behaviours such as levels of homeworking, it creates several challenges around comparing like for like data, pre and post COVID-19.

Importantly when considering changes in walking numbers to and from the school, in response to a requirement to provide greater levels of social distancing, the school introduced a one-way system with exit points on parts of the site not captured by the AI cameras.

Being mindful of the potential impacts that the COVID-19 pandemic may have had on travel behaviour at the time of follow up data collection, findings of our evaluation suggest that:

- Some traffic displacement has occurred as a result of the junction closure. However, this appears to be offset by the overall reduction in traffic recorded since the junction closure. Traffic around the school was recorded to have reduced by 68% across school drop off and collection times. Follow up surveys have also captured a reduction in sentiment that the streets around All Hallows Road are congested.
- There is also a 29 percentage point increase in people saying they would now walk to the Bannerman Road Community Academy.
- In terms of comparatively measuring footfall, changing walking patterns have been evidenced, that might in part be attributed to the introduction of a one-way entry and exit system through the school site. Total school walking trips recorded have dropped by 7% (47), but this is not consistent across AM and PM school trips. The impacts of COVID-19 have made a direct comparative study difficult.
- Total cycling has fallen across the day and at school peak times by 25% (119) and 24% (25) respectively. Numbers and patterns outside of traditional adult commute times, however, remain broadly unchanged. It appears that fewer commuter trips, possibly as a result of increased levels of home working, may have contributed this.

- Road safety appears to have improved at the area around the junction closure with lower traffic volumes, reductions in traffic speeds, more informal crossing behaviours and an increase in sentiment that All Hallows Road is now safer for walking and cycling.
- Follow up perception surveys suggest there now a high level of support for the junction closure with 79% of respondents now supporting the closure as opposed to 10% not supporting the closure. This has changed from a base line level of 64% support and 25% opposition. There is however a question about the impact and the value of delivering this intervention through a co-design process. Enthusiasm for the design, although still very strong, would appear to have reduced, and sentiment that residents input matters have become more ambivalent since 2019.

The evidence presented within this study suggests that further research considering a wide range of behaviours would be beneficial to better understand the impacts of point closures or filtered permeability within residential neighbourhoods, the delivery of these projects using co-design methods and the introduction of placemaking interventions within the highway context. Data collection could be further improved by monitoring more streets in the surrounding area and using control sites for comparison.

Additional studies including controls would allow further understanding of some of the complexities discussed in this report and help to expand the body of evidence needed to better understand these interventions.

7. Lessons Learned

There is evidence that the impact of COVID-19 has had several significant impacts on the ability to comparatively analysis data captured prior and then during the global pandemic. The impacts have been widespread and have affected many areas of our lives, from travel behaviour, work routines, propensity to be in contact with others, either internally or externally, as well as operational aspects of publicly accessible locations, such as the introduction of one-way systems. Being able to predict such huge occurrences, is not reasonably possible, however COVID-19 as well as other aspects of the delivery and analysis carried out, have highlighted elements that could have been done differently.

7.1.1 Control sites

A control site/s would provide a better base for analysis, including understanding specific impacts that may be related to COVID-19 across all the metrics. General movement patterns, including increases/decreases of vehicles, pedestrians and cyclists across the day and at specific times of day. As well as information relating to comparative crossing behaviour and changes to sentiment that may be related to the wider social and physical impacts of COVID-19.

7.1.2 Broaden geographical area of data collection

The focus of this report was to understand the direct impacts of the closure of Frog Marsh bridge to traffic. It was the determined that capturing displacement could be achieved by vehicle only data capture on streets around the perimeter of the school and more nuanced pedestrian behavioural changes, including changing levels of footfall, could be limited to the area directly around the closure point.

As we have seen, as a result of COVID-19, entry and exit systems around the school have been changed and the lack of cameras around the wider perimeter of the school have made it difficult to comparatively analyse the collected data.

7.1.3 Statistical analysis

Resource and evaluation planning should include adequate statistical tests to be able to confirm whether or not changes meet a pre-determined levels of statistical significance.

7.1.4 Focussed surveys

As with the observation that a wider geographical scope for camera data collection would have helped with comparative analysis, a more focussed approach to survey delivery would help with understanding perceptions in the streets that appear to be experiencing either higher or lower traffic flows. Data has captured a change in vehicles either throughout or at specific times of day, but does sentiment of the residents on the streets support these observations?

7.1.5 Survey questions

A number of aspects relating survey questions might have been improved:

Filtering of return participants between base line and follow up. Postcode data was captured, predominantly to identify participants direct relationship to the area. However, a question allowing the filter of participants who had answered surveys at both base line and follow up would be useful for a direct comparison of changing sentiment.

A specific question asking identifying parents at the school. The question was included as part of 'what is your relationship to the area?', however, participants may have been both resident and parents at the school. It would be useful to include this as a separate question.

Filtering differences in sentiment relating between road safety and other safety concerns such as fear of crime or anti-social behaviour.

Build in more analysis time contingency, allowing for unforeseen circumstances such as COVID-19

An assumption was made during project development, that data would be easily comparable and that fundamentally the analysis would be a relatively simple comparison of changes occurring between base line and follow up. The significant and wide-reaching impacts of COVID-19 have made this direct comparison difficult, particularly when considering pedestrian movement patterns. The level of analysis to understand the implications of COVID-19, what the significance of the data is and where or where not, comparison may be valid, has been considerably more time intense than was originally envisaged.

8. References

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9. Appendix

9.1 Survey Data

9.1.1 Sustrans 2019 Baseline

5 = Strongly Agree, 1 = Strongly Disagree												
Respondent ID	What is your relationship to the area?	What is your gender	What is your age?	What is your ethnic group?	If you travel to Bannerman Road Community Academy, how would you usually travel?	Do you think All Hallows Road is currently safe for walking or cycling?	Do you think closing the junction of All Hallows Road & Albion Road will make the area safer for walking and cycling?	Do you think the street is an enjoyable place to be?	Do you think the proposed designs will improve the street?	Do you think the surrounding streets are congested?	I feel my contribution to the project matters	I support the permanent closure of the junction between All Hallows Road and Albion Road
10831937500	Parent/Carer at school	Male	35-44	White British	Walk	2	4	2	4	4	4	4
10821834089	Parent/Carer at school	Female	35-44	White British	Walk	2	4	2	4	4	4	4
10839005545	Resident of the area	Female	45-54	White British	Car	2	3	3	4	4	4	4
10838543618	Other	Female	35-44	White other	Car	2	3	3	4	4	4	4
10823038496	Resident of the area	Female	35-44	White other	Cycle	3	3	3	4	4	4	4
10813369648	Resident of the area	Female	25-34	White British	Walk	2	4	3	4	2	4	4
10822008770	Parent/Carer at school	Female	25-34	White British	Walk	4	4	4	4	3	4	4
10838705531	Other	Female	35-44	White British	Other	2	4	3	4	4	2	4

10838930637	Resident of the area	Female	35-44	Mix/Multiple	Walk	2	4	2	3	5	2	4
10839630084	Other	Male	45-54	White British	Other	3	4	4	4	4	3	4
10839617020	Resident of the area	Female	45-54	Asian or Asian British	Cycle	2	2	4	4	4	3	4
10836501483	Resident of the area	Female	25-34	White other	Walk	4	4	2	4	4	3	4
10821857333	Parent/Carer at school	Female	45-54	White British	Walk	2	4	3	4	4	3	4
10838144768	Resident of the area	Prefer not to stay	25-34	White British	Cycle	2	4	4	3	2	3	4
10839674769	Parent/Carer at school	Female	35-44	Other	Car	1	3	1	5	4	5	4
10838513490	Other	Female	25-34	White British	Cycle	3	4	3	4	5	5	4
10837755615	Parent/Carer at school	Female	35-44	White other	Walk	4	3	3	4	4	4	2
10825307885	Resident of the area	Male	16-24	Asian or Asian British	Car	4	2	4	2	2	2	2
10839699260	Parent/Carer at school	Female	35-44	Other	Walk	2	2	3	2	2	2	2
10838139119	Resident of the area	Female	25-34	White British	Walk	4	3	2	3	3	2	2
10839683217	Parent/Carer at school	Female	35-44	White British	Car	2	2	4	4	4	3	2
10838413244	Resident of the area	Female	35-44	White British	Walk	4	4	3	4	4	3	2
10838583116	Resident of the area	Female	45-54	White British	Walk	3	2	4	3	4	3	2
10837754375	Resident of the area	Female	55-64	White British	Walk	4	3	4	3	4	4	3
10837929590	Resident of the area	Female	25-34	White other	Other	2	4	3	3	4	4	3
10838147748	Resident of the area	Female	25-34	White British	Walk	2	3	2	3	5	4	3
10837866257	Resident of the area	Male	25-34	Mix/Multiple	Cycle	4	4	2	4	5	2	3
10822406951	Resident of the area	Female	35-44	White other	Other	2	3	3	3	4	3	3
10837715629	Resident of the area	Female	16-24	White British	Other	3	3	4	4	3	3	3

10838394886	Resident of the area	Male	35-44	Prefer not to say	Cycle	3	4	3	3	3	3	3
10838730549	Resident of the area	Male	25-34	Prefer not to say	Other	3	3	3	3	3	3	3
10839651329	Resident of the area	Female	35-44	White British	Walk	4	3	4	3	5	3	3
10838253030	No response	No response	No response	No response	No response	No response	No response	No response	No response	No response	No response	No response
10812963645	Parent/Carer at school	Female	35-44	White British	Walk	2	4	4	5	4	4	5
10837923182	Parent/Carer at school	Female	35-44	White British	Walk	4	5	4	5	4	4	5
10838717247	Parent/Carer at school	Female	25-34	White British	Walk	2	4	2	5	4	4	5
10822145896	Parent/Carer at school	Female	25-34	Black or Black British	Walk	2	5	2	5	2	4	5
10822042384	Resident of the area	Male	45-54	White British	Cycle	1	4	2	3	5	4	5
10822011044	Parent/Carer at school	Female	35-44	White British	Walk	4	5	2	5	5	4	5
10838966191	Resident of the area	Female	35-44	White British	Walk	2	5	2	5	5	4	5
10816791698	Parent/Carer at school	Female	35-44	White British	Walk	2	5	2	5	5	4	5
10837723348	Resident of the area	Female	25-34	White British	Walk	2	4	2	3	5	3	5
10821824886	Resident of the area	Female	35-44	White British	Cycle	2	5	4	5	5	3	5
10822207928	Other	Female	35-44	White British	Walk	2	4	3	5	5	3	5
10822150667	Parent/Carer at school	Male	35-44	White British	Walk	1	5	4	5	4	5	5
10813392478	Parent/Carer at school	Female	35-44	White other	Walk	1	5	4	5	4	5	5
10812988815	Member of staff	Female	35-44	White British	Car	2	5	2	5	4	5	5
10811991764	Other	Male	45-54	White British	Public Transport	2	5	2	5	4	5	5
10822161417	Resident of the area	Female	35-44	White British	Walk	1	5	1	5	2	5	5
10839676546	Parent/Carer at school	Female	25-34	White British	Walk	2	5	2	5	5	5	5

10821806832	Parent/Carer at school	Female	25-34	White British	Walk	2	5	3	5	5	5	5
10839721516	Resident of the area	Female	25-34	Asian or Asian British	Walk	4	2	4	4	4	4	1
10825434413	Resident of the area	Female	35-44	Asian or Asian British	Walk	4	2	4	3	2	4	1
10825312406	Resident of the area	Female	65+	White British	Walk	2	1	3	2	4	2	1
10825333595	Resident of the area	Prefer not to stay	35-44	Prefer not to say	Walk	5	1	3	3	3	2	1
10823863575	Resident of the area	No response	55-64	White British	Walk	4	2	3	1	5	2	1
10822053372	Resident of the area	Female	45-54	White British	Walk	3	4	3	1	3	3	1
10825343851	Resident of the area	Male	35-44	White British	Walk	4	1	3	1	5	3	1
10825297151	Resident of the area	Female	35-44	Prefer not to say	Walk	4	1	4	1	4	5	1
10825339859	Resident of the area	Male	45-54	White other	Cycle	5	1	3	3	2	5	1
10825300738	Resident of the area	Female	35-44	Asian or Asian British	Walk	5	1	5	1	2	5	1
10813189566	Resident of the area	Female	55-64	Black or Black British	Walk	4	2	3	3	3	5	1
10825362602	Resident of the area	Male	45-54	Prefer not to say	Car	5	1	3	1	3	5	1
10825783637	Resident of the area	Male	55-64	White British	Walk	3	1	2	1	4	1	1
10839669772	Parent/Carer at school	Male	35-44	Asian or Asian British	Car	3	1	3	2	2	1	1
10825947921	Resident of the area	Female	45-54	White British	Car	2	2	1	2	2	1	1
10838956601	Resident of the area	Prefer not to stay	45-54	Prefer not to say	Car	5	1	1	1	1	1	1

9.1.2 Community Group 2019 Baseline

ABOUT YOU					DO YOU THINK... 5 = Strongly Agree, 1 = Strongly Disagree							AND FINALLY...	Any other comments / notes
Survey number	You are a:	Gender	Age	Ethnic group	How do you normally travel to school?	All Hallows Road is safe for w & c?	Closing the junction will make the area safer for w & c?	Is the street an enjoyable place to be?	The proposed designs will improve the street?	The surrounding streets are congested?	I feel my contribution to this project matters	I support the permanent closure of the junction	
1	Parent/Carer	Female	35-44	White British	Cycle	2	5	2	5	2	4	5	"Increased safety around the school (smiley face 5), decreased dodgey driving on one way loop (smiley face 5), increased priority for pedestrian and cyclists (smiley face 5)"
2	Parent/Carer	Female	35-44	Asian or Asian British	Walk	1	5	1	5	4	5	5	resident and parent both ticked
3	Parent/Carer	Female	25-34	Mix/multiple	Walk	1	5	1	5	3	5	5	resident and parent both ticked
4	Parent/Carer	Female	35-44	White other	Walk	1	5	1	5	4	5	5	resident and parent both ticked
5	Parent/Carer	Female	25-34	Black or Black British	Walk	1	5	1	5	2	5	5	resident and parent both ticked
6	Parent/Carer	Female	25-34	Black or Black British	Walk	1	5	1	5	4	5	5	resident and parent both ticked
7	Parent/Carer	Female	25-34	Black or Black British	Walk	No response	No response	No response	No response	No response	No response	No response	resident and parent both ticked
8	Parent/Carer	Female	35-44	Black or Black British	Car	2	4	3	4	1	4	5	resident and parent both ticked, car and walk both ticked
9	Parent/Carer	Male	35-44	Mix/multiple	Walk	1	5	1	5	4	5	5	resident and parent both ticked
10	Parent/Carer	Female	25-34	Black or Black British	Walk	1	5	1	5	3	5	5	resident and parent both ticked
11	Parent/Carer	Female	35-44	Black or Black British	Public transport	1	5	1	5	4	5	5	
12	Parent/Carer	Female	35-44	No response	Walk	1	5	1	5	3	5	5	resident and parent both ticked
13	Parent/Carer	Male	16-24	White other	Walk	4	4	4	5	2	3	4	resident and parent both ticked; walk, cycle and car all ticked
14	Parent/Carer	Female	35-44	White other	Walk	4	5	4	5	4	5	5	walk, cycle and car all ticked
15	Parent/Carer	Female	35-44	White British	Walk	2	5	2	5	3	5	5	"Definitely a good thing - difficult road, dangerous corner for crossing / cycling and

														loads of illegal parking and air pollution outside school"
16	Parent/Carer	Female	25-34	Asian or Asian British	Walk	1	5	1	5	3	5	5		
17	Parent/Carer	Female	35-44	White British	Walk	4	1	3	1	2	5	1		"Will add more congestion to surrounding streets, plus cars turning at the bottom?! The road is quiet apart from school pick up. The problem is the parents. Awful idea."
18	Parent/Carer	Male	16-24	Prefer not to say	Walk	1	No response	1	5	1	No response	No response		"We need a safe place to walk"
19	Parent/Carer	Female	25-34	Black or Black British	Walk	1	5	1	5	2	5	5		
20	Parent/Carer	Female	25-34	White other	Walk	1	1	3	5	5	5	5		
21	Parent/Carer	Female	25-34	Prefer not to say	Walk	1	5	1	1	3	5	5		
22	Parent/Carer	Female	25-34	White British	Walk	1	5	2	5	5	5	5		"Slightly concerned about the impact on Easton Road traffic at junction with Kilburn Street (we live on Windsor Grove)"
23	Parent/Carer	Female	35-44	White British	Walk	2	4	4	5	2	5	5		
24	Parent/Carer	Female	35-44	White British	Walk	4	1	3	1	3	1	1		
25	Member of staff	Female	35-44	Prefer not to say	Walk	3	5	No response	No response	1	5	No response		Walk and Car both ticked. Missing info
26	Member of staff	Female	45-54	White British	Cyle	1	5	4	3	5	5	5		"As long as no roundabout is put at the bottom"
27	Member of staff	Female	16-24	White British	Walk	2	4	2	4	3	5	5		Walk and Car both ticked
28	Member of staff	Female	45-54	Prefer not to say	Walk	2	5	2	5	4	3	5		Walk and Cycle both ticked
29	Member of staff	Female	35-44	White British	Car	1	5	3	5	5	5	5		
30	Parent/Carer	Male	65+	Black or Black British	Walk	1	5	5	1	5	5	5		
31	Parent/Carer	Female	35-44	White British	Walk	2	5	3	4	1	5	5		
32	Parent/Carer	Female	25-34	White other	Walk	1	No response	5	5	5	5	5		
33	Parent/Carer	Female	35-44	White British	Walk	3	2	3	3	2	3	1		"It's only congested during school hours"
34	Parent/Carer	Female	35-44	White British	Walk	2	5	2	4	5	5	5		Walk and Cycle both ticked. "How can we stop parents driving short distances to school?"

35	Parent/Carer	Female	25-34	Asian or Asian British	Walk	1	5	1	5	4	5	5	
36	Parent/Carer	Male	25-34	Black or Black British	Car	4	5	4	No response	5	5	5	
37	Parent/Carer	Female	25-34	Black or Black British	Walk	3	4	4	No response	4	No response	3	
38	Parent/Carer	Female	35-44	Black or Black British	Walk	2	4	3	4	4	3	3	
39	Parent/Carer	Female	35-44	Asian or Asian British	Walk	5	3	4	2	4	3	1	
40	Resident	Male	25-34	Black or Black British	Car	4	2	4	No response	4	2	2	
41	Resident	Female	35-44	White British	Walk	No response	5	No response	3	5	No response	5	
42	Parent/Carer	Female	35-44	White other	Walk	1	5	1	5	3	5	5	
43	Parent/Carer	Female	25-34	Mix/multiple	Car	1	5	1	5	1	4	4	Public transport also ticked
44	Parent/Carer	Female	25-34	Black or Black British	Walk	1	5	1	5	2	5	5	
45	Parent/Carer	Female	25-34	Mix/multiple	Walk	1	5	1	5	2	5	5	
46	Parent/Carer	Female	25-34	Mix/multiple	Walk	1	5	1	5	2	4	5	
47	Parent/Carer	Male	25-34	Mix/multiple	Walk	1	5	2	5	2	5	5	

9.1.3 Sustrans 2021 Follow-up

5 = Strongly Agree, 1 = Strongly Disagree													
Id	What is your relationship to the area?	Gender	Age	What is your ethnic group?	If you travel to Bannerman Road Community Academy, how would you usually travel?	All Hallows Road is safe for walking and cycling	Closing the junction at All Hallows Road and Albion Road has made the area safer for walking and cycling	The street is an enjoyable place to be	The design of the Frog Marsh area has improved the street	The surrounding streets are congested	I feel that my contribution to this project mattered	I support the permanent closure of the junction between All Hallows Road and Albion Road	Any other comments
12810388385	Resident of the area	Prefer not to say	65+	Prefer not to say	No response	4	4	4	4	3	3	4	
12806273856	Resident of the area	Prefer not to say	35-44	Prefer not to say	Walk	3	3	3	3	4	2	1	
12808575171	Resident of the area	no response	55-64		No response	4	3	2	1	2	No response	1	
12825883489	Resident of the area	Male	35-44	Mix/Multiple	Walk	4	2	3	4	4	3	1	I 4 it's good to have it closed around school drop off and collection times, but the state of Chelsea road now for cars and particularly the junction by the Easton community centre is horrendous. Leaving the frog marsh junction open at other hours would greatly reduce the daily congestion in the area. I'm sure the incident numbers on Chelsea road has increased and am not sure the pay off is an overall benefit to the community.
12824575667	Resident of the area	Male	35-44	White British	Cycle	4	4	4	4	2	3	4	
12822701524	Parent/Carer at school	Male	35-44	White British	Walk	4	4	4	4	2	3	4	
12819305872	Resident of the area	Male	45-54	White other	Walk	2	3	2	2	4	3	2	Of the many traffic problems in the area, I don't see that closing this street helps at all

12818495178	Parent/Carer at school	Male	35-44	White other	Walk	2	4	4	4	1	3	4	There should be more pop up events under the Frog Marsh bridge. There should be enforcement for parents who park on pavement and double yellows at roundabout on school side of frog marsh.
12817989100	Resident of the area	Male	25-34	White British	Walk	4	4	4	4	2	3	4	The orange is great!
12816864045	Resident of the area	Male	55-64	White British	No response	2	2	2	1	3	1	1	This survey is completely biased. It makes no allowance for the impact of displaced traffic onto the surrounding roads following the closure. Nor does it allow for comments about the increase in drug dealing in the area supported by couriers waiting under the railway bridge/by the concrete seating. No recognition is made of the different use of the area outside of school hours; the number of women who will no longer use the road after dark; the very high incidence of graffiti under the railway bridge - recognised by the Council in the extensive use of 'anti-graffiti' sealant - this is very much at odds with most of the surrounding area. I would like the author of the survey to contact me to discuss a more balanced survey. Stuart Phelps - Chair of Plan-EL Neighbourhood Planning Forum for the area - email: stuart.p58@zoho.com
12816273239	Resident of the area	Male	35-44	Asian or Asian British	Walk	3	1	2	2	4	2	1	Congestion in wider area has gone up. How is this helping?!
12816109030	Resident of the area	Male	45-54	White British	No response	2	4	4	4	3	4	4	This road is not closed - it's just no longer choked by cars. It remains open for active travel, for people, for simply being. Like all roads should be. We desperately need more 'closures' of this kind across

													Bristol's residential areas, especially in Easton. I fully support the permanent closure of All Hallows Road, and would like to see the same thing happen on St marks Road, High Street, Hinton Road, Emlyn Road, Mivart Street, Rosemary Lane and a great many others!
12815479947	Resident of the area	Male	35-44	White British	Cycle	4	4	4	4	3	3	4	
12815447395	Parent/Carer at school	Male	35-44	White British	Walk	2	4	3	4	4	3	3	The vivid blue paint has not aged well into the environment. When the paint is renewed a more natural colour might be better overall with accents of brighter colours
12815216801	Resident of the area	Male	35-44	White British	Other	4	4	2	2	4	3	4	I don't like the colour scheme, I think it looks awful. There are loads of great street artists in the area getting some of them to do some graffiti and murals would be much better
12814645632	Resident of the area	Male	45-54	Black or Black British	Walk	4	1	2	1	1	1	1	
12814169183	Resident of the area	Male	25-34	White British	Walk	4	4	4	4	4	4	4	
12813437843	Resident of the area	Male	55-64	White British	No response	4	4	3	3	4	3	4	The closure was good, but all the blue paint and endless futile attempts to stop the graffiti etc. seem like a hell of a waste of money when you look at the state of other bits of Easton - and even the piles of dumped rubbish along the railway embankment. Just up the road there is endless drug dealing on the street, the streets are full of potholes - but we do have a blue bit!
12812855052	Resident of the area	Male	35-44	White British	Walk	4	4	4	4	2	4	4	It's a shame we haven't been able to have so many events there as of yet. Hopefully more there in the future!

12812816933	Resident of the area	Male	35-44	White British	Other	3	4	4	4	4	3	4	
12812790163	Resident of the area	Male	35-44	Other	Cycle	4	4	4	4	4	3	4	
12812555884	Resident of the area	Male	45-54	White British	Walk	4	4	3	3	3	3	4	
12812539450	Resident of the area	Male	25-34	Asian or British	Walk	2	4	3	4	4	4	4	The closure of the junction, and the artistic way in which it was done, has made that end of the road great to walk through, and I imagine has reduced car traffic near the school too. It does feel a bit unsafe at night (particularly in winter), as there's not that much foot traffic on that stretch of the road at night time. Having a safer connection between Frog Marsh and the railway path via All Hallows Road may help with this. That would also reduce the amount of pavement parking, and general high speeds of cars on the road.
12812513446	Resident of the area	Male	45-54	White British	Walk	4	4	4	4	1	3	4	This closure provides a safer and more relaxing route from Easton Rd to Albion Rd (the alternative being Chelsea Rd, which is horrible to walk or cycle along). It's excellent that the closure has also reduced traffic next to the school. This makes the area safer for children: both in terms of risk of collision and improved air quality.
12812485797	Other	Male	55-64	Prefer not to say	Other	4	2	4	4	3	3	3	The junction at All Hallows Road and Albion Road is NOT closed. The restriction only applies to MOTOR vehicles, and so many of your questions are confusing and unlikely to generate accurate responses.
12812417182	Resident of the area	Male	25-34	White British	Other	4	4	4	4	4	3	4	
12807402878	Resident of the area	Male	35-44	White British	Walk	3	4	3	4	4	4	4	The closure has immeasurably improved the street environment around Bannerman Road school and Albion Road play park. I've

													given ambivalent answers to some of the questions because All Hallows Road can still feel pretty car-dominated and unsafe further towards the junction with Easton Road. I wish the Easton Safer Streets project had been implemented in a far more comprehensive way. It would have greatly reduced traffic volumes, and conflicts, improved safety and encouraged active travel along Chelsea Road and throughout Easton.
12806372941	Resident of the area	Male	55-64	White British	Cycle	2	2	1	1	4	3	1	It has pushed traffic onto other already narrow road space (e.g. Chelsea Road) and thus probably, in a broader view, reduced overall road safety in the area. I can imagine the road, now devoid of people outside school hours, feels unsafe for pedestrians, or certainly for any who feel vulnerable to street crime. Moreover, the way the arch has now been painted - I can't imagine what you were thinking with that blue - is just an eyesore and a visual blight on the character of the area. It just looks wrong. Overall, a pointless exercise and a very poorly executed waste of public funds.
12877415853	Resident of the area	Female	45-54	White other	Cycle	4	4	4	3	4	3	4	Whilst I fully support the road closure and the community aspects of the project- I feel the design has aged terribly particularly the floor paint. I wondered what the plans are for upkeep. On the whole though it's greatly improved that area and the lack of traffic is so so much safer and far less fumeey!! Thanks 🙏
12831225261	Resident of the area	Female	35-44	White British	Other	4	4	2	3	2	2	3	Na

12828858888	Resident of the area	Female	35-44	White British	Cycle	3	4	3	4	4	4	4	
12828498423	Member of staff	Female	35-44	White British	Car	3	4	2	4	4	3	4	
12826008282	Resident of the area	Female	35-44	White British	Walk	3	4	4	4	4	4	4	I think the frog marsh area could be further improved by some greenery and planting.
12823939688	Resident of the area	Female	35-44	White British	Walk	4	4	4	4	3	3	4	Please do more of these initiatives and stop pandering to the needs of motorists. Climate breakdown has begun and air quality in Bristol is very poor, we urgently need to optimize sustainable travel options for everyone.
12823302522	Resident of the area	Female	35-44	White British	Walk	3	4	4	4	1	3	4	
12821775788	Resident of the area	Female	25-34	Black or Black British	Other	4	4	3	4	4	4	4	
12819805027	Resident of the area	Female	25-34	White other	Walk	4	4	3	3	4	3	4	Would be nice to change colour every now and then :)
12819275094	Parent/Carer at school	Female	35-44	White British	Walk	4	4	3	4	2	3	4	
12818363149	Other	Female	55-64	White British	Car	4	4	4	4	3	3	4	
12818130978	Resident of the area	Female	35-44	White British	Walk	4	2	2	2	3	1	3	It has attracted drug dealers and is often filthy with unwanted discards, not great for school children. It is poorly designed as has caused more problems than it has solved. It is a significant missed opportunity to reduce traffic in the area as has caused congestion in nearby streets. I'm not entirely sure why Easton needs a bollard museum, but I suppose that could be part of the Easton Arts trail.
12818114020	Member of staff	Female	35-44	White British	Car	4	4	4	4	4	3	4	I was not in the area before the road closure, so hard to judge the change
12818102760	Member of staff	Female	45-54	White British	Car	4	4	3	4	4	3	4	

12818072901	Member of staff	Female	55-64	Black or Black British	Car	3	3	3	3	4	3	3	
12818001853	Resident of the area	Female	25-34	White British	Walk	4	4	2	2	2	2	4	The blue on the floor makes the large amount of bird shit so much more obvious than it was before! The dead pigeons that keep getting stuck in the wire mesh above is horrific. The bird problem should have been fixed before the floor was painted such a light colour. And why has anti graffiti paint been put up? The graffiti was the only nice bit about that area! Couldn't someone paint a mural in there or something to make it feel less dark and gloomy?
12817912724	Other	Female	25-34	White British	Walk	No response	No response	No response	No response	No response	No response	No response	The changes at frog Marsh have made the area quiet and pleasant, I always go that way with my son to get to other areas/parks
12817901550	Resident of the area	Female	45-54	White British	Car	3	2	3	2	4	2	2	This closure has forced congestion around it and made it harder to navigate around Easton. It was also renamed in a way that makes no sense to many in the community.
12817823239	Parent/Carer at school	Female	35-44	White other	Walk	4	4	4	4	3	4	4	Love that the road has been closed. So much better as a resident and parent of the school. Shame the blue paint has chipped and worn so quickly. Excited to see more people using the space for events
12817421052	Resident of the area	Female	55-64	White British	Car	2	2	1	2	4	1	1	
12817026999	Resident of the area	Female	35-44	White British	Walk	2	1	2	1	4	3	2	The decorative work is absolutely awful. We've got so many amazing artists in the area. Why just a shoddy blue and orange job? The closure has not made bannerman road feel safer as a woman walking alone and the traffic filtering down Chelsea road now to get to and from Easton Road is terrible. Poorly researched and poorly executed.

12816283053	Resident of the area	Female	25-34	White British	Walk	4	4	4	4	3	4	4	
12816082802	Resident of the area	Female	35-44	Mix/Multiple	Walk	4	4	4	4	4	3	4	I like the roundabout by the Bannerman EY. So much nicer now the traffic is just pedestrians and cyclists. It would be nice to have planters or something to soften the area a bit. The blue on the floor is quite over powering. Or even a painted trail for kids to follow with footsteps to follow, jump, spin, hopscotch etc. I know pigeons live there too, but could they be restricted to one part at all so their poo isn't all over the place? Bit of a tall order maybe?
12815501317	Resident of the area	Female	45-54	White other	Walk	4	4	4	4	4	4	4	
12815299441	Resident of the area	Female	45-54	White British	Other	4	4	2	2	4	1	1	Walking alone I feel more in danger as cars are not driving by. I don't go that way at night meaning a long way round detour on my way home. I now feel cut off from my friends who live very close. I miss quickly popping to my friends in the evening on eastbourn rd, I am Britannia rd. When driving the detour can be troublesome, Chelsea rd often very congested. My personal car use has gone up by 3 or 4 mins every time I enter or leave the area from that side.
12815174291	Resident of the area	Female	65+	White British	Walk	2	1	1	1	4	1	1	It's incredibly ugly, the bridge is a magnet for drug dealers and their customers. It has divided Easton in two, it's a complete disaster and I absolutely hate it
12814914675	Resident of the area	Female	35-44	White British	Other	4	4	4	4	4	3	4	.
12813238987	Other	Female	35-44	White British	Walk	4	4	4	4	4	3	4	
12812877741	Resident of the area	Female	45-54	White British	Cycle	4	4	4	4	2	3	4	

12812795168	Resident of the area	Female	35-44	Other	Walk	4	4	4	4	2	4	4	
12812515780	Resident of the area	Female	35-44	White other	No response	4	4	4	4	2	3	4	I think the road closure has been a great improvement, but would like to see further measures to encourage pedestrian/cycle traffic under the bridge to make it feel safer during the day and into the evening when it can get quite quiet. Perhaps a safer corridor from the Railway Path across Easton Road could encourage footfall under the bridge and increase use as a route to St Marks Road? Less pavement parking could also help to improve safety for walking and cycling in the area as paths are often blocked and visibility quite low. Overall, really positive change -- thank you!
12812507136	Resident of the area	Female	35-44	White British	Walk	4	4	4	4	3	3	4	More planting please!
12812477152	Resident of the area	Female	45-54	White British	Cycle	4	4	4	4	3	3	4	
12812452211	Resident of the area	Female	45-54	Mix/Multiple	No response	2	2	2	2	4	2	2	Area feels much unsafer to walk around at night as a result of the closure which has encourage use of area under bridge for drug dealing/antisocial behaviour. Street furniture uncomfortable Lighting needs improvement
12812430787	Resident of the area	Female	45-54	White British	Walk	4	4	1	1	4	3	4	Terrible paint, that looks old and uncared area, seating not fit for purpose, badly designed, great idea
12812429815	Resident of the area	Female	45-54	White British	Walk	4	4	4	4	1	3	4	It's a fantastic reimagining of a grotty railway underpass. I haven't seen it at school drop / pick up, but can imagine it's well used by children and families. We've had fun passing through it when walking around the neighbourhood.
12812423506	Resident of the area	Female	45-54	Other	Walk	2	4	4	4	2	3	4	

12812272112	Resident of the area	Female	45-54	White British	Walk	4	4	4	4	2	3	4	The closure of this road has been great during covid: Easton pavements/ roads generally are congested with parked cars etc- this has provided a safe, uncongested route for walking and cycling. It feel marginally less safe late at night than it used to, because it is very quiet. But overall, good initiative, it should stay.
12811197354	Resident of the area	Female	35-44	White British	Walk	3	4	2	3	4	1	4	I find it so sad to see the beer cans strewn around the front of the school, no one bothering to clear them up. I've picked up litter in the area numerous times. The seating area in particular seems to attract beer cans. I know litter in general and fly tipping is a big problem in the area but at least children could walk to school without seeing beer cans normalised. It's not a good predictor for their future health that adults around them seem to think that is acceptable/ normal. The safety aspect as enormous improvement. I'll never forget a large rubbish truck rushing under that bridge at speed as I was about to cross with a toddler and a baby with pram. It was pretty terrifying! So this is a great improvement. I just wish the appearance of the place was more fitting for a place of education for young children - I planted the trees in the pots and some flowers in recent years (before the works were done) but I feel some more greenery would improve it a lot.
12810367220	Other	Female	35-44	White British	Public Transport	3	3	3	4	4	3	3	No
12810169212	Resident of the area	Female	55-64	White British	Walk	4	3	2	1	4	1	1	The area painted blue has looked dirty since a few days after installation and the seats/plinths are

													already broken. There is constantly broken glass and other debris around the seats. The colours are totally unsuitable for bristol weather. There was no consultation with local residents on the works except the name and this was not easy to access, it would have been good if consultation was made directly by leaflets or other direct methods to people who live by the school. The works are seen as a mess and comments by anyone I know who pass them regularly are derisory. It has not reduced traffic, cars regularly drive up and down the road to the bridge and school pick up/drop off traffic is still bad.
12807430093	Parent/Carer at school	Female	35-44	White British	Walk	4	4	4	4	4	4	4	Need lots more traffic calming/road closures in Easton
12806735584	Resident of the area	Female	45-54	Asian or Asian British	Car	4	4	3	4	3	3	3	
12806395621	Resident of the area	Female	45-54	Asian or Asian British	Car	4	1	1	1	4	3	1	
12806311181	Other	Female	45-54	Asian or Asian British	Car	4	4	4	3	4	3	2	Has created congestion elsewhere. Particularly St Marks Rd into Stapleton Rd.
12806208091	Resident of the area	Female	45-54	Mix/Multiple	Walk	2	4	4	4	4	4	4	I'd love to see more closures such as this one. The speeds in the area have increased since Covid and we need to create better infrastructure for walking, cycling and families.
12804324071	Other	Female	65+	White British	Cycle	2	4	4	4	3	3	4	It's a fab project. The paint though needs a touch up!
12804324071	Other	Female	65+	White British	Cycle	2	4	4	4	3	3	4	It's a fab project. The paint though needs a touch up!

9.1.4 Community Group 2021 Follow-up

Survey number	ABOUT YOU					DO YOU THINK... 5 = Strongly Agree, 1 = Strongly Disagree							AND FINALLY...	Any other comments / notes
	You are a:	Gender	Age	Ethnic group	Home postcode	How do you normally travel to school?	All Hallows Road is safe for w & c?	Closing the junction will make the area safer for w & c?	Is the street an enjoyable place to be?	The proposed designs will improve the street?	The surrounding streets are congested?	I feel my contribution to this project matters	I support the permanent closure of the junction	
5	Parent/Carer	Female	35-44	White British	BS5 0LY	Walk	5	5	5	5	1	3	5	
12	Member of staff	Female	45-54	Black or Black British	BS5 7FN	Cyle	5	5	5	5	1	5	5	Walk also ticked
60	Parent/Carer	Female	45-54	White other	BS5 0GF	Walk	4	4	3	3	1	4	4	
92	Resident	Female	35-44	Black or Black British	BS5	Cyle	5	5	5	5	1	5	5	
31	Parent/Carer	Female	35-44	White other	BS5 0LE	Walk	5	5	5	5	2	3	5	
36	Parent/Carer	Female	35-44	White other	BS5 9XF	Car	5	5	3	3	2	4	4	
50	Parent/Carer	Female	25-34	White other	BS5 6DA	Walk	5	5	4	3	2	4	4	
58	Parent/Carer	Female	35-44	Asian or Asian British	BS5 6DE	Walk	5	5	4	3	2	4	5	
74	Parent/Carer	Female	35-44	White other	BS5 0EX	Walk	4	4	3	4	2	4	4	
75	Parent/Carer	Female	35-44	Asian or Asian British	BS5 0FL	Walk	4	4	4	4	2	4	4	
77	Parent/Carer	Female	35-44	White other	BS5 6AX	Walk	5	5	4	4	2	4	5	
82	Parent/Carer	Female	25-34	Asian or Asian British	BS5 8DF	Walk	5	5	3	4	2	5	5	
85	Parent/Carer	Female	65+	White British	BS31 2AE	Car	4	4	3	2	2	4	4	
94	Student	Female	16-24	White British	BS5 6BH	Walk	3	5	5	5	2	5	5	
96	Parent/Carer	Female	25-34	Asian or Asian British	BS5 0IX	Walk	5	5	3	3	2	4	4	
105	Parent/Carer	Female	25-34	Black or Black British	BS5 5AO	Walk	5	4	4	4	2	5	5	

109	Member of staff	Female	45-54	White British	BS49 4HW	Car	3	4	3	3	2	2	4	
113	Parent/Carer	Female	45-54	White other	BS5 6DN	Walk	4	4	5	5	2	4	5	
2	Resident	Female	45-54	Black or Black British	BS5 0HS	Walk	5	5	5	5	3	3	3	The closure has definitely made the area quieter and safe
3	Resident	Female	25-34	White British	BS5 6YE	Walk	4	4	5	4	3	4	4	Walk/cycle/car all ticked
7	Parent/Carer	Female	25-34	Mix/multiple	BS5 0FL	Car	3	3	3	5	3	1	3	
9	Resident	Female	25-34	Black or Black British	BS5 0LE	Walk	5	3	1	3	3	3	3	
14	Resident	Female	16-24	Black or Black British	BS5	Walk	3	4	3	2	3	3	3	
15	Resident	Female	16-24	Black or Black British	BS5	Walk	4	4	5	4	3	4	4	
16	Resident	Female	16-24	Black or Black British	BS5 0PY	Walk	3	5	5	5	3	5	5	
20	Parent/Carer	Female	45-54	Black or Black British	Incomplete	Cyle	5	5	5	5	3	1	3	
21	Parent/Carer	Female	35-44	White British	BS5 0LB	Walk	5	5	5	5	3	3	5	"I love it! Especiallay the blue - much imporved :-)"
25	Parent/Carer	Female	25-34	Asian or Asian British	BS5 6EX	Walk	5	5	4	4	3	3	5	
27	Student	Female	16-24	White British		Walk	5	5	5	4	3	3	5	
28	Parent/Carer	Female	35-44	White British	BS5 6DA	Walk	5	5	3	4	3	3	5	
34	Resident	Female	35-44	White other	BS5 0RR	Cyle	3	3	3	3	3	3	4	
39	Member of staff	Female	35-44	Black or Black British	BS5 6DF	Walk	4	5	4	4	3	4	4	
43	Parent/Carer	Female	35-44	Asian or Asian British	BS5 7BF	Walk	5	4	4	4	3	4	4	
46	Parent/Carer	Female	25-34	Black or Black British	BS5 6DA	Walk	5	5	4	3	3	4	4	
47	Parent/Carer	Female	25-34	White other	BS5 6GH	Walk	4	3	4	4	3	4	4	
48	Parent/Carer	Female	25-34	Black or Black British	BS5 6AS	Walk	5	5	4	4	3	4	4	
52	Parent/Carer	Female	25-34	Black or Black British	BS5 0XB	Walk	5	5	5	3	3	5	5	

55	Parent/Carer	Female	25-34	Black or Black British	BS5 0JZ	Walk	4	4	3	3	3	4	3	
59	Parent/Carer	Female	35-44	Asian or Asian British	BS7 9TN	Walk	5	4	4	4	3	5	5	
61	Parent/Carer	Female		Asian or Asian British	BS5 6KY	Walk	5	5	4	4	3	4	5	
68	Parent/Carer	Female	25-34	White British	BS5 0DF	Walk	3	3	4	3	3	3	2	
72	Parent/Carer	Female	25-34	Black or Black British	BS5 0LU	Walk	4	4	3	3	3	3	4	
80	Parent/Carer	Female	25-34	Asian or Asian British	BS5 0LB	Walk	4	5	4	4	3	4	5	
81	Parent/Carer	Female	25-34	Asian or Asian British	BS5 0LB	Walk	4	5	4	4	3	4	5	
86	Parent/Carer	Female	25-34	Asian or Asian British	BS7 9YW	Car	4	4	3	3	3	4	4	
89	Parent/Carer	Female	25-34	White other	BS5 0NH	Walk	3	3	3	5	3	5	4	
90	Parent/Carer	Female	25-34	Black or Black British	BS5 0PD	Walk	4	4	3	4	3	4	4	
98	Parent/Carer	Female	45-54	Black or Black British	BS5 6DF	Walk	4	4	2	3	3	4	4	
103	Parent/Carer	Female	25-34	White other	BS5 0EL	Walk	5	5	4	4	3	4	5	
106	Parent/Carer	Female	25-34	Asian or Asian British	BS5 0YD	Walk	5	4	4	4	3	4	5	
107	Parent/Carer	Female	25-34	Black or Black British	BS5 0SA	Walk	5	4	4	4	3	4	4	
108	Member of staff	Female	45-54	Asian or Asian British	BS5 6JY	Walk	5	4	4	4	3	4	5	
6	Resident	Female	45-54	Asian or Asian British	Incomplete		4	4	3	3	4	3	3	Incomplete
22	Parent/Carer	Female	35-44	White British	Incomplete	Cyle	5	3	5	5	4	3	5	"It's a shame when graffiti is removed, I like it when it's more colourful under the bridge - also could it be used as a venue for a market?"
41	Parent/Carer	Female	16-24	White other	BS5 6AE	Walk	4	5	5	5	4	4	5	
42	Parent/Carer	Female	35-44	White British	BS5 0RD	Cyle	2	5	5	5	4	3	5	
64	Resident	Female	16-24	Asian or Asian British	BS5 6DU	Walk	2	4	4	4	4	4	5	

66	Parent/Carer	Female	25-34	White British	BS5 OEX	Walk	4	4	4	4	4	3	4	
73	Parent/Carer	Female	35-44	Asian or Asian British	BS5 OEN	Walk	4	4	4	4	4	4	4	
88	Student	Female	35-44	White other	BS4	Car	5	5	5	5	4	4	5	
97	Parent/Carer	Female	16-24	Asian or Asian British	BS5	Walk	4	4	4	3	4	4	4	
11	Resident	Female	35-44	Prefer not to say	BS5 OSE	Car	5	5	4	5	5	3	5	"I think hat imporvements have definitely been made to the Frog Marsh area. The road closure has imporved safety and the signage, floor paint and street furnitruue in bright colours make the area relaxing. I look forwad to events here when Covid goverment restrictions permit.
13	Parent/Carer	Female	25-34	Asian or Asian British	BS5 6BA	Walk	5	5	5	5	5	5	5	
17	Parent/Carer	Female	16-24	Black or Black British	BS5 OEN	Walk	5	5	5	5	5	1	5	It's nice because I play football here"
18	Parent/Carer	Female	45-54	Asian or Asian British	Incomplete	Walk	5	5	5	5	5	5	5	"This area is very safe to walk and cycle for children and adults'
62	Parent/Carer	Female	35-44	White British	BS5 6DB	Walk	4	4	4	4	5	3	4	
102	Resident	Female	35-44	White other	BS5 0LD	Walk	5	5	3	4	5	3	5	
35	Resident	Male	25-34	Prefer not to say	BS5 5FG	Car	2	2	4	2	1	3	1	"Unfair for people with buisness and vans"
40	Parent/Carer	Male	35-44	Black or Black British	BS5 0XH	Car	1	1	1	2	1	2	1	
91	Parent/Carer	Male	25-34	Black or Black British	BS5 6DS	Walk	5	5	5	5	1	5	5	
100	Resident	Male	45-54	Black or Black British	BS5 6AF	Cyle	5	5	4	3	1	5	5	
4	Parent/Carer	Male	25-34	White British	BS5 0IY	Other	4	4	4	4	2	3	4	Re communte - works from home
32	Resident	Male	35-44	Mix/multiple	BS5	Walk	5	4	5	5	2	3	3	Re Q3 "Yes, but not sure if it's made it better"
37	Resident	Male	35-44	Asian or Asian British	BS5 ONS	Walk	4	4	3	3	2	4	4	
67	Parent/Carer	Male	25-34	Asian or Asian British	BS5 0LE	Walk	4	4	3	4	2	3	4	

79	Parent/Carer	Male	25-34	Black or Black British	BS5 OPS	Walk	4	4	3	3	2	4	5
84	Parent/Carer	Male	45-54	Black or Black British	BS5 6DQ	Walk	5	5	4	3	2	4	4
99	Parent/Carer	Male	25-34	White other	BS5 OET	Walk	4	4	2	3	2	4	4
104	Resident	Male	45-54	White British	BS5 ORA	Walk	No response	No response	No response	No response	2	4	5 Incomplete
110	Parent/Carer	Male	45-54	Black or Black British	BS7 9TN	Walk	4	4	3	3	2	4	4
8	Resident	Male	65+	Black or Black British	BS5	Walk	4	4	4	4	3	3	5
26	Student	Male	16-24	White British	BS5 6AT	Walk	5	3	5	5	3	3	5
29	Parent/Carer	Male	35-44	Asian or Asian British	BS6 5PA	Walk	4	4	3	3	3	3	4
30	Parent/Carer	Male	35-44	White other	BS5 6QN	Walk	5	5	5	5	3	3	5
38	Parent/Carer	Male	35-44	Black or Black British	BS5 OAS	Walk	4	4	4	4	3	4	4
44	Parent/Carer	Male	35-44	Asian or Asian British	BS5 OLY	Walk	5	5	4	4	3	4	4
45	Parent/Carer	Male	45-54	Black or Black British	BS5 6DF	Walk	4	4	4	3	3	3	4
49	Parent/Carer	Male	35-44	Prefer not to say	BS5 6AE	Walk	5	5	3	4	3	4	3
51	Parent/Carer	Male	35-44	White other	BS5 6AA	Walk	4	4	3	4	3	4	4
54	Parent/Carer	Male	45-54	Black or Black British	BS5 6DR	Car	4	4	3	4	3	3	4
56	Parent/Carer	Male	35-44	Black or Black British	BS5 6DF	Walk	5	5	3	4	3	4	4
69	Parent/Carer	Male	45-54	Black or Black British	BS5 OEL	Walk	4	4	3	4	3	4	4
70	Parent/Carer	Male	25-34	Black or Black British	BS5 OPD	Walk	4	4	3	3	3	4	4
76	Parent/Carer	Male	25-34	White other	BS5 6NE	Walk	4	4	3	4	3	3	4
78	Parent/Carer	Male	35-44	Black or Black British	BS5 OHF	Walk	4	4	3	4	3	5	4
83	Parent/Carer	Male	35-44	Black or Black British	BS5 9TJ	Walk	5	4	4	4	3	4	4

87	Parent/Carer	Male	65+	White British	BS31	Car	4	4	3	4	3	4	4	"safer all round"
93	Parent/Carer	Male	55-64	Black or Black British	BS15 1LT	Car	4	4	3	3	3	4	4	
101	Parent/Carer	Male	35-44	White British	BS5 6AR	Walk	3	4	3	4	3	3	5	
111	Parent/Carer	Male	35-44	Black or Black British	BS5 ORR	Walk	4	4	3	4	3	4	4	
53	Parent/Carer	Male	25-34	Mix/multiple	Incomplete	Car	3	4	4	3	4	4	4	
57	Parent/Carer	Male	35-44	Asian or Asian British	BS5 6SX	Walk	5	5	4	4	4	4	4	
65	Resident	Male	25-34	Asian or Asian British	BS5 0JT	Walk	2	4	5	5	4	4	5	
95	Resident	Male	25-34	Black or Black British	BS5 0JQ	Walk	4	3	3	3	4	3	3	
112	Resident	Male	35-44	White British	BS5 0JQ	Walk	4	4	4	4	4	4	4	
10	Parent/Carer	Male	25-34	White British	BS5 0HW	Car	5	5	3	5	5	3	5	"Good job guys, well done"
19	Parent/Carer	Male	55-64	Prefer not to say	Incomplete	Cyle	3	3	3	5	5	3	3	"Too many people like to drive cars. Area has improved re street crime over last 30 years but this could change quite rapidly"
33	Parent/Carer	Male	35-44	Asian or Asian British	BS5 6BZ	Walk	5	5	5	5	5	3	5	"I've lived here my whole life" Also remember the name Frog Marsh
63	Parent/Carer	Male	16-24	Mix/multiple	BS5 6DH	Walk	5	5	5	5	5	5	5	
71	Resident	Male	35-44	White British	BS5 6JF	Walk	5	5	5	5	5	5	4	
1	Resident						4	5	4	4	3	3	4	Doesn't feel safe at night, area is dark/quiet. Street is an enjoyable place to be in the day and in summer, has FM improved the street - "it's brighter"
24	Parent/Carer				Incomplete		5	5	5	3	3	3	3	
23	Student				Incomplete		5	5	3	5	5	5	5	

9.2 ATC Data

9.2.1 ATC Speed data

5-DAY MEAN							
	Normanby Road 2019	Normanby Road 2021	Chaplin Road 2019	Chaplin Road 2021	Graham Road 2019	Graham Road 2021	
0000-2400 Vehicle Flow	508	463	422	535	583	319	
Mean Speed	17.33	16.36	14.62	15.16	17.57	11.32	
85 percentile Speed	23.47	20.32	18.51	19.17	22.99	14.43	
No. Vehicles > 30 MPH Limit	2.00	0.80	1.40	0.80	3.20	0.00	
% Vehicles > 30 MPH Limit	0.41	0.17	0.28	0.14	0.56	0.00	
No. Vehicles > 45 MPH	0.00	0.00	0.20	0.00	0.00	0.00	
% Vehicles > 45 MPH	0.00	0.00	0.05	0.00	0.00	0.00	

9.2.2 ATC Volume data

5 Day Daily Average Hourly Flow							
Hr Ending	Normanby Road 2019	Normanby Road 2021	Chaplin Road 2019	Chaplin Road 2021	Graham Road 2019	Graham Road 2021	
1	7.0	6.2	6.4	8.4	4.6	3.4	
2	3.2	2.8	3.6	3.4	4.6	2.6	
3	3.4	2.2	3.2	2.2	2.2	1.8	
4	2.0	1.6	1.0	0.6	2.4	2.2	

5	0.2	1.2	0.6	1.8	3.2	2.0
6	3.4	1.4	2.8	2.2	3.2	2.2
7	4.8	4.6	5.4	4.8	4.6	3.6
8	15.2	18.0	14.6	17.2	23.6	12.8
9	41.2	47.8	33.8	35.2	61.4	39.6
10	29.0	17.0	29.4	22.2	36.6	10.4
11	19.0	20.0	20.0	26.0	26.0	12.0
12	25.6	23.8	18.6	30.4	32.2	14.0
13	32.4	27.4	24.4	32.2	32.8	21.6
14	26.4	25.4	32.8	31.0	30.0	18.0
15	44.2	41.8	30.4	47.2	37.4	30.4
16	36.2	49.2	31.2	53.2	50.2	38.2
17	36.0	30.2	29.0	41.0	43.0	20.8
18	36.4	36.2	18.0	41.2	41.6	21.4
19	33.6	25.4	28.0	31.8	34.8	15.4
20	30.4	22.8	22.4	30.8	32.2	12.0
21	25.0	20.0	22.2	26.0	24.6	12.4
22	21.0	14.8	20.0	19.6	21.6	9.8
23	17.0	10.2	14.4	15.0	15.6	6.0
24	15.2	13.0	10.2	11.8	14.2	6.4

9.3 AI Video Data

9.3.1 2019 Baseline All Hallows Road Flow per Hour – Pedestrians, Cyclists, and Vehicles

Time Period	cyclist north	cyclist south	person north	person south	car north	car south	truck north	truck south	van north	van south
19/06/2019 06:00	0	0	2	2	2	7	1	0	1	2
19/06/2019 07:00	1	2	27	23	13	60	0	1	1	9
19/06/2019 08:00	3	9	58	57	25	83	0	1	1	10
19/06/2019 09:00	2	3	17	16	13	41	0	1	2	8
19/06/2019 10:00	1	2	16	16	19	24	0	0	3	7
19/06/2019 11:00	1	2	53	48	12	29	1	0	2	3
19/06/2019 12:00	3	5	28	27	16	33	0	2	1	4
19/06/2019 13:00	4	2	17	27	22	38	0	1	3	6
19/06/2019 14:00	9	2	62	44	24	37	0	0	3	4
19/06/2019 15:00	7	5	27	45	19	31	0	0	2	6
19/06/2019 16:00	12	15	49	37	29	48	1	0	5	10
19/06/2019 17:00	6	5	18	25	48	52	0	0	10	3
19/06/2019 18:00	4	4	18	17	11	18	0	0	2	1
20/06/2019 06:00	0	1	3	2	1	10	1	0	1	2

20/06/2019 07:00	3	5	24	32	7	45	1	3	3	9
20/06/2019 08:00	3	8	38	40	21	39	0	1	5	4
20/06/2019 09:00	2	0	19	15	13	32	1	0	1	1
20/06/2019 10:00	2	2	21	11	10	28	0	4	3	5
20/06/2019 11:00	1	4	35	52	29	35	1	5	3	6
20/06/2019 12:00	2	5	35	29	19	46	3	1	2	7
20/06/2019 13:00	6	1	12	24	21	44	1	0	4	9
20/06/2019 14:00	3	3	48	44	42	54	2	1	6	1
20/06/2019 15:00	3	5	37	55	39	46	0	2	1	10
20/06/2019 16:00	6	5	44	36	48	65	0	1	3	8
20/06/2019 17:00	9	3	54	43	25	45	0	0	2	6
20/06/2019 18:00	3	1	7	18	14	23	0	0	3	2

9.3.2 2019 Baseline Albion Road Flow per Hour – Pedestrians, Cyclists, and Vehicles

Time period	cyclist north	cyclist south	person north	person south	car north	truck north	van north
19/06/2019 06:00	9	0	10	0	20	1	7
19/06/2019 07:00	33	2	42	18	128	2	18
19/06/2019 08:00	35	3	110	34	130	1	20

19/06/2019 09:00	21	2	32	6	62	2	18
19/06/2019 10:00	11	2	28	20	58	1	12
19/06/2019 11:00	14	2	37	27	70	1	9
19/06/2019 12:00	12	1	25	27	70	4	10
19/06/2019 13:00	17	4	26	28	61	0	17
19/06/2019 14:00	12	5	50	74	85	0	13
19/06/2019 15:00	19	6	40	50	83	0	18
19/06/2019 16:00	24	7	25	49	91	1	15
19/06/2019 17:00	31	4	18	31	106	0	8
19/06/2019 18:00	19	5	12	20	48	0	5
20/06/2019 06:00	6	1	5	0	22	1	5
20/06/2019 07:00	31	2	51	16	111	3	16
20/06/2019 08:00	40	2	95	36	79	3	10
20/06/2019 09:00	38	3	19	12	51	3	5
20/06/2019 10:00	9	1	17	8	67	3	13
20/06/2019 11:00	8	1	25	27	80	10	15
20/06/2019 12:00	18	2	36	33	83	2	16
20/06/2019 13:00	13	4	38	47	91	5	17
20/06/2019 14:00	23	4	39	79	91	2	9
20/06/2019 15:00	19	3	34	25	99	3	19

20/06/2019 16:00	23	1	22	46	121	1	16
20/06/2019 17:00	30	7	40	40	103	1	12
20/06/2019 18:00	22	6	19	25	53	0	5

9.3.3 2019 Baseline Albion Road Flow per Hour – Pedestrians, Cyclists, and Vehicles

Time period	Cyclist east	Cyclist west	Person east	Person west
19/06/2019 07:00	0	2	11	20
19/06/2019 08:00	4	9	64	151
19/06/2019 09:00	2	6	17	24
19/06/2019 10:00	1	2	10	14
19/06/2019 11:00	1	2	48	28
19/06/2019 12:00	2	2	40	57
19/06/2019 13:00	4	4	41	27
19/06/2019 14:00	4	3	25	47
19/06/2019 15:00	4	3	163	63
19/06/2019 16:00	6	5	32	34
19/06/2019 17:00	11	8	39	26
19/06/2019 18:00	6	5	32	28
20/06/2019 07:00	1	2	6	10
20/06/2019 08:00	5	5	66	151
20/06/2019 09:00	0	2	18	19
20/06/2019 10:00	1	3	24	21
20/06/2019 11:00	2	3	34	25
20/06/2019 12:00	4	4	36	40
20/06/2019 13:00	3	4	27	27

20/06/2019 14:00	2	5	37	58
20/06/2019 15:00	4	5	119	36
20/06/2019 16:00	4	5	31	24
20/06/2019 17:00	8	6	33	24
20/06/2019 18:00	2	4	20	23

9.3.4 2021 Follow-up All Hallows Road Flow per Hour – Pedestrians, Cyclists, and Vehicles

All Hallows - Going North (left up) - Day: 25/5/2021						
time	car	cyclist	person	small truck	truck	van
07	3		1	6		
08	6		7	89		1
09	2			13		1
10			2	13		
11	9		1	34		
12	6		4	45		1
13	1		4	23		
14	10		1	38	1	2
15	8		4	87		1
16	4		4	28		
17	7		11	31		1
18	1		4	14		

All Hallows - Going South (right down) - Day: 25/5/2021

time	car	cyclist	person	small_truck	van
07		2	2	14	
08		10	6	37	1
09		3		10	
10		1	5	10	
11		10	1	32	
12		6	6	42	2
13		1	4	22	
14		7	2	14	1 1
15		12	9	22	1
16		4	3	25	
17		5	7	24	1
18		2	2	18	

All Hallows - Going North (left up) - Day: 26/5/2021					
time	car	cyclist	person	van	total
07		5	1	14	34
08		9	7	84	174
09		3	2	12	26
10		2	3	15	33
11		4		20	43
12		6	5	45	1 112
13		5	5	24	63
14		7	4	57	1 128
15		7	3	92	1 193
16		4	4	30	71

17	1	10	35	88
18	1	5	28	67

All Hallows - Going South (right down) - Day: 26/5/2021					
Time	car	cyclist	person	small_truck	van
07		4	2	10	
08		11	3	42	
09		2	2	14	
10		3	4	12	
11		5	2	29	
12		8	2	41	1
13		4	7	32	
14		5	2	26	1
15		9	6	48	1
16		4	7	26	
17		1	7	37	
18		1	6	27	

9.3.5 2021 Follow-up Albion Road Flow per Hour – Pedestrians, Cyclists, and Vehicles

Going north						Going south						
25-May	car	cyclist	person	small_truck	truck	van	car	cyclist	person	small_truck	truck	van
07	29	6	31	1	5	0	0	1	8	0	0	0
08	60	4	125			10	0	0	54			0

09	35	1	43	51	11	0	0	14	11	0
10	31	7	45	1	16	0	0	45	0	0
11	42	9	61		24	1	0	71		0
12	39	9	26	2	23	1	1	25	0	0
13	57	8	18	1	17	1	1	28	0	0
14	46	2	38	1	31	0	0	25	0	0
15	46	9	50		22	0	0	93		0
16	45	12	34		34	0	1	23		0
17	51	7	28		25	0	3	29		0
18	32	14	27		20	1	1	26		0

Going north				Going south						
26-May	car	cyclist	person	truck	van	car	cyclist	person	truck	van
07		30	8	28		8	0	1	8	0
08		47	5	144	3	13	0	0	57	0
09		36	5	53	1	6	4	0	45	0
10		48	0	86	2	14	0	3	89	0
11		39	6	29	1	14	0	0	20	0
12		50	6	55	3	18	2	0	46	0
13		32	7	53		17	0	0	31	0
14		49	9	51	1	13	0	1	35	0
15		66	10	65	1	12	0	2	93	0
16		56	10	37		18	0	5	57	0
17		71	24	56	2	16	0	1	46	0
18		59	18	61	1	7	0	3	41	0

9.3.6 2021 Follow-up Bannerman Road Flow per Hour – Pedestrians and Cyclists

Time period	Cyclist east	Cyclist west	Person east	Person west	
25/05/2021 07:00		0	2	5	9
25/05/2021 08:00		4	5	64	161
25/05/2021 09:00		0	2	14	15
25/05/2021 10:00		1	3	14	10
25/05/2021 11:00		1	1	40	25
25/05/2021 12:00		4	4	34	44
25/05/2021 13:00		2	1	24	19
25/05/2021 14:00		1	5	28	50
25/05/2021 15:00		4	4	107	32
25/05/2021 16:00		3	4	25	21
25/05/2021 17:00		6	4	32	22
25/05/2021 18:00		1	2	13	19
26/05/2021 07:00		1	2	7	10
26/05/2021 08:00		5	4	67	141
26/05/2021 09:00		0	1	22	23
26/05/2021 10:00		1	2	33	31
26/05/2021 11:00		2	5	27	25
26/05/2021 12:00		3	3	37	36
26/05/2021 13:00		3	6	30	34
26/05/2021 14:00		3	4	46	66
26/05/2021 15:00		4	6	131	39
26/05/2021 16:00		4	6	36	27
26/05/2021 17:00		9	7	34	26
26/05/2021 18:00		3	5	26	26

9.3.7 2019 Baseline Albion Road Speed Data (North)

North	
time period	Average of norm_speed
19/06/2019 07:00	20.1 km/h
19/06/2019 08:00	20.9 km/h
19/06/2019 09:00	18.4 km/h
19/06/2019 10:00	18.1 km/h
19/06/2019 11:00	17.6 km/h
19/06/2019 12:00	18.0 km/h
19/06/2019 13:00	18.0 km/h
19/06/2019 14:00	17.9 km/h
19/06/2019 15:00	17.2 km/h
19/06/2019 16:00	17.9 km/h
19/06/2019 17:00	17.7 km/h
19/06/2019 18:00	18.0 km/h
19/06/2019 19:00	18.2 km/h
20/06/2019 07:00	19.4 km/h
20/06/2019 08:00	20.5 km/h
20/06/2019 09:00	17.9 km/h
20/06/2019 10:00	17.0 km/h
20/06/2019 11:00	17.4 km/h
20/06/2019 12:00	17.1 km/h
20/06/2019 13:00	17.8 km/h
20/06/2019 14:00	18.0 km/h
20/06/2019 15:00	16.9 km/h
20/06/2019 16:00	17.8 km/h

20/06/2019 17:00	17.5 km/h
20/06/2019 18:00	17.0 km/h
20/06/2019 19:00	16.5 km/h

9.3.8 2021 Follow-up Albion Road Speed Data (North)

North	
time period	Average of speed (km/h)
25-May	
07	23.63333333
08	21.57894737
09	21.11363636
10	22.10869565
11	21.13793103
12	21.52
13	22.20689655
14	23.203125
15	20.9137931
16	21.15873016
17	21.75384615
18	23.28205128
26-May	
07	22.88571429
08	20.86666667
09	22.45945946
10	20.6779661
11	20.7

12	21.55555556
13	20.24
14	21.3559322
15	21.82191781
16	21.66176471
17	19.93055556
18	21.98387097

9.3.9 2019 Baseline All Hallows Road Speed Data (North and South)

	north	south
time period	Average of norm_speed	Average of norm_speed
19/06/2019 07:00	28.5 km/h	27.7 km/h
19/06/2019 08:00	27.2 km/h	28.0 km/h
19/06/2019 09:00	22.8 km/h	25.2 km/h
19/06/2019 10:00	21.7 km/h	25.6 km/h
19/06/2019 11:00	26.3 km/h	24.0 km/h
19/06/2019 12:00	24.5 km/h	23.8 km/h
19/06/2019 13:00	26.1 km/h	26.5 km/h
19/06/2019 14:00	25.9 km/h	25.3 km/h
19/06/2019 15:00	23.2 km/h	20.9 km/h
19/06/2019 16:00	25.7 km/h	24.5 km/h
19/06/2019 17:00	25.0 km/h	24.0 km/h
19/06/2019 18:00	26.4 km/h	24.4 km/h
19/06/2019 19:00	31.8 km/h	27.2 km/h

20/06/2019 07:00	28.0 km/h	26.4 km/h
20/06/2019 08:00	26.3 km/h	26.3 km/h
20/06/2019 09:00	24.8 km/h	24.0 km/h
20/06/2019 10:00	24.5 km/h	25.8 km/h
20/06/2019 11:00	28.5 km/h	28.3 km/h
20/06/2019 12:00	22.9 km/h	22.3 km/h
20/06/2019 13:00	23.2 km/h	25.2 km/h
20/06/2019 14:00	25.1 km/h	24.1 km/h
20/06/2019 15:00	23.8 km/h	21.1 km/h
20/06/2019 16:00	27.0 km/h	22.1 km/h
20/06/2019 17:00	26.5 km/h	25.3 km/h
20/06/2019 18:00	26.5 km/h	26.7 km/h
20/06/2019 19:00	27.5 km/h	25.5 km/h

9.3.10 2021 Follow-up All Hallows Road Speed Data (North and South)

	North	South
Time period	Average of speed (km/h)	Average of speed (km/h)
25-May		
07	13.1	13.94444444
08	9.050632911	11.41176471
09	8.333333333	10
10	12.75	9.555555556
11	11.16666667	10.1
12	10.47058824	8.661290323
13	11.51724138	7.833333333
14	11.96969697	11.09090909

15	10.14285714	9.803571429
16	11.625	9.105263158
17	12.14705882	10.13157895
18	11.5	8.576923077
26-May		
07	16.95238095	16.9
08	10.14545455	10.19354839
09	15.8	12.64705882
10	13.79166667	10.13333333
11	8.121212121	6.87804878
12	10.98148148	9.152173913
13	13.55555556	8.846153846
14	9.578125	8.702702703
15	9.64556962	9.895833333
16	11.06666667	11.11363636
17	13.3	9.039215686
18	10.8	8.693877551