



Central 6 Streets Plan - Westy LTN Monitoring Report June 2023

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Executive Summary

Survey process and feedback

This final Monitoring Report covers the period between the Low Traffic Neighbourhood (LTN) installation in June 2022 and May 2023. This included an initial adjustment phase when drivers had to adapt to the new restrictions and routing. Data was also recorded throughout the school holidays, and for clarity data associated with the holiday periods will be marked in grey in the graphs presented through the report.

Warrington Borough Council (WBC) committed to a comprehensive monitoring of the LTN interventions installed in Westy, as this has been vital to:

- inform the council and the public of the impacts of the scheme.
- establish whether the scheme delivered the intended objectives.
- inform whether any changes were required to the experimental scheme while in place.

Since the LTN was installed on 20 June 2022:

- Despite a recorded increase in vehicular traffic, the number of vehicles using A5061 Knutsford Road and A50 Kingsway South remains below pre-Covid levels. Traffic speeds have not changed.
- More than 3,600 daily car through-trips have been removed from the neighbourhood.
- The number of pedestrians on Grange Avenue has increased by 50%.
- No significant changes in Air Quality have been recorded on the LTN boundary roads.
- Average speeds on Henshall Avenue and Broadbent Avenue rose initially but have fallen on Henshall Avenue following the changes in November 2022.
- Since the LTN installation, there was a decrease in car use as a mode of transport to school of -8% for St Augustine Primary School's pupils and -5% for Alderman Bolton Primary School.

Methodology

Introduction

This report presents the findings of monitoring the experimental LTN in Westy. The LTN was installed on 20th June 2022 as an experimental scheme with the aim of reducing through traffic on residential routes, making the street environment more pleasant and safer for local residents, pedestrians and cyclists - in line with government policies and guidelines. In November 2022, some changes were made to the locations of the modal filters; these are shown on the following pages.

Method

A comprehensive Monitoring Plan has been designed to ensure that key impacts of the LTN scheme are monitored and recorded. This has enabled decisions to be made based upon clear and accurate evidence and identifying benefits and any challenges arising as a result of the LTN.

Monitoring included:

- Traffic levels within the LTN area and the adjacent boundary road network
- Highway journey times
- Walking & cycling levels
- Air quality

This report is the final monitoring statement, following an interim report issued in November 2022 and a Newsletter published in March 2023. It is intended to provide an insight into the LTN's impacts since installation, by presenting all key data which has been collected in relation to the LTN.



Figure 1 Planter on Grange Avenue - June 2022

Figure 2 highlights the area covered by the monitoring strategy –this includes the LTN area and the boundary roads of A50 Kingsway South and A5061 Knutsford Road. Within this report, when discussing the 'internal LTN area' we will be referring to the shaded pink zone and when discussing the 'LTN boundaries' we will be referring to the routes outlined in purple.

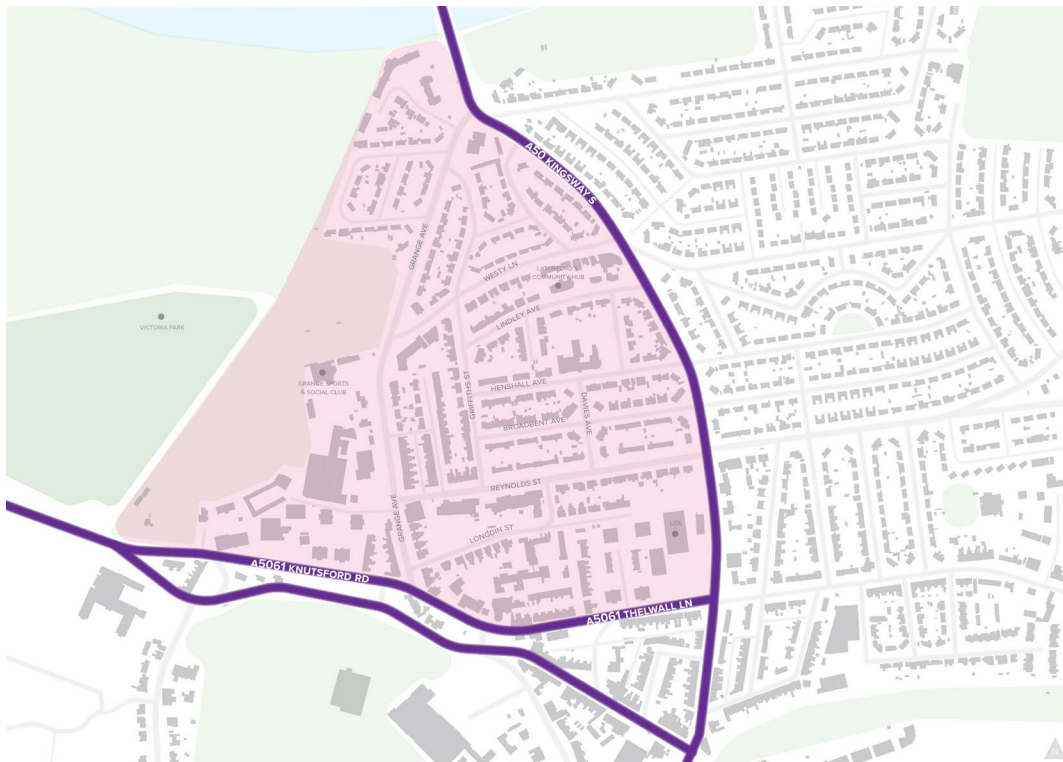


Figure 2 Westy LNT Boundary Roads

The following chapters illustrate a series of before and after datasets, with the aim of showing how traffic has changed following the LTN's installation. Data sources for the monitoring analysis include:

- Permanent counter sites to inform the baseline data
- Automatic Traffic Counters (ATCs)
- Automatic Number Plate Recognition (ANPR) surveys
- Google Maps live traffic
- Air quality monitoring tubes

COVID-19

The LTN was installed in 2022 following the COVID-19 pandemic. Therefore, traffic surveys undertaken before installation may have been impacted by wider background trends associated with COVID-19. In many cases, post-installation data has been compared with 2019 data to avoid the significant disruption present throughout 2020 and 2021. All key surveys were undertaken outside of strict lockdown periods and seasonal trends have been compared against historical data to ensure the validity of the baseline data.

Figure 3 shows the locations of modal filters and changes to the traffic management arrangements delivered on 20th June 2022, which was the configuration covered by Interim Monitoring Report #1.

In November 2022, following engagement and the initial monitoring, a small number of changes were made to the scheme to address some of the concerns raised. These changes are shown in Figure 4.

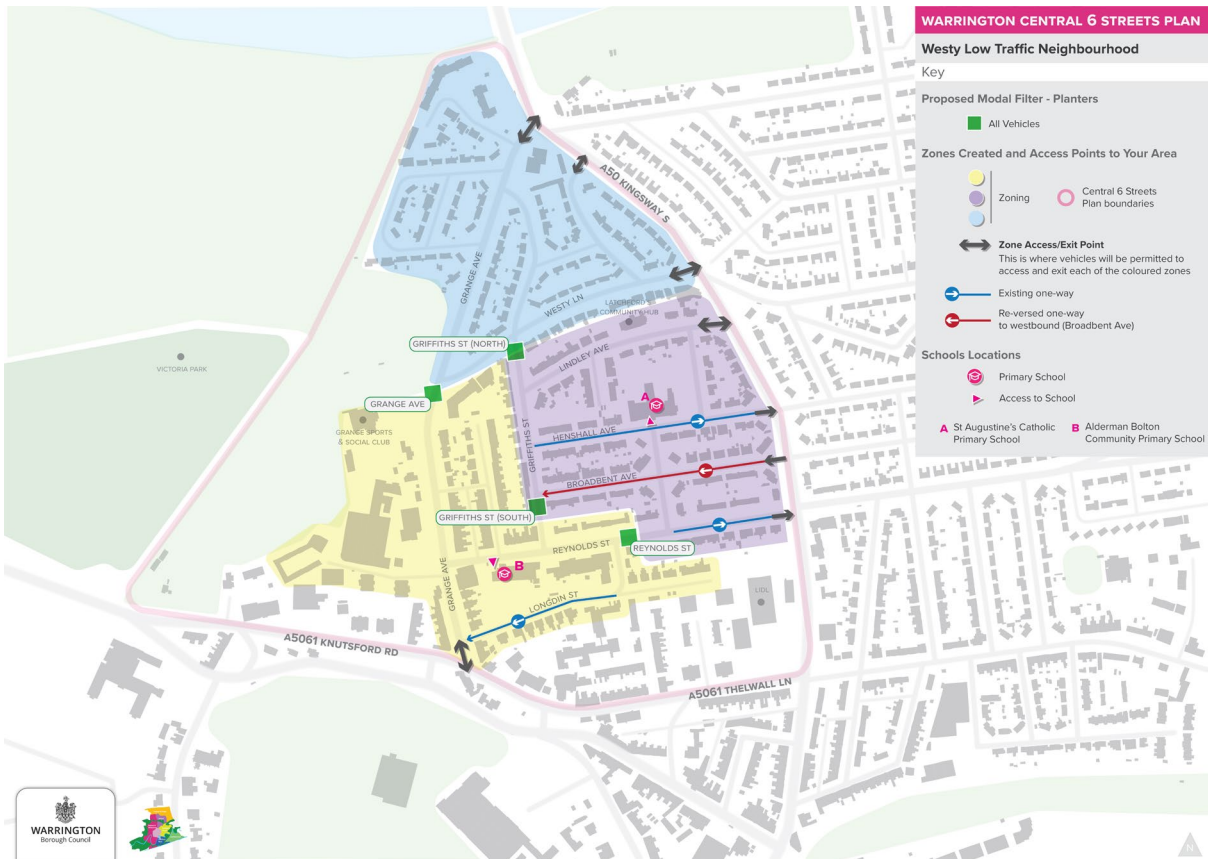


Figure 3 Westy LTN Modal Filter Locations in June 2022

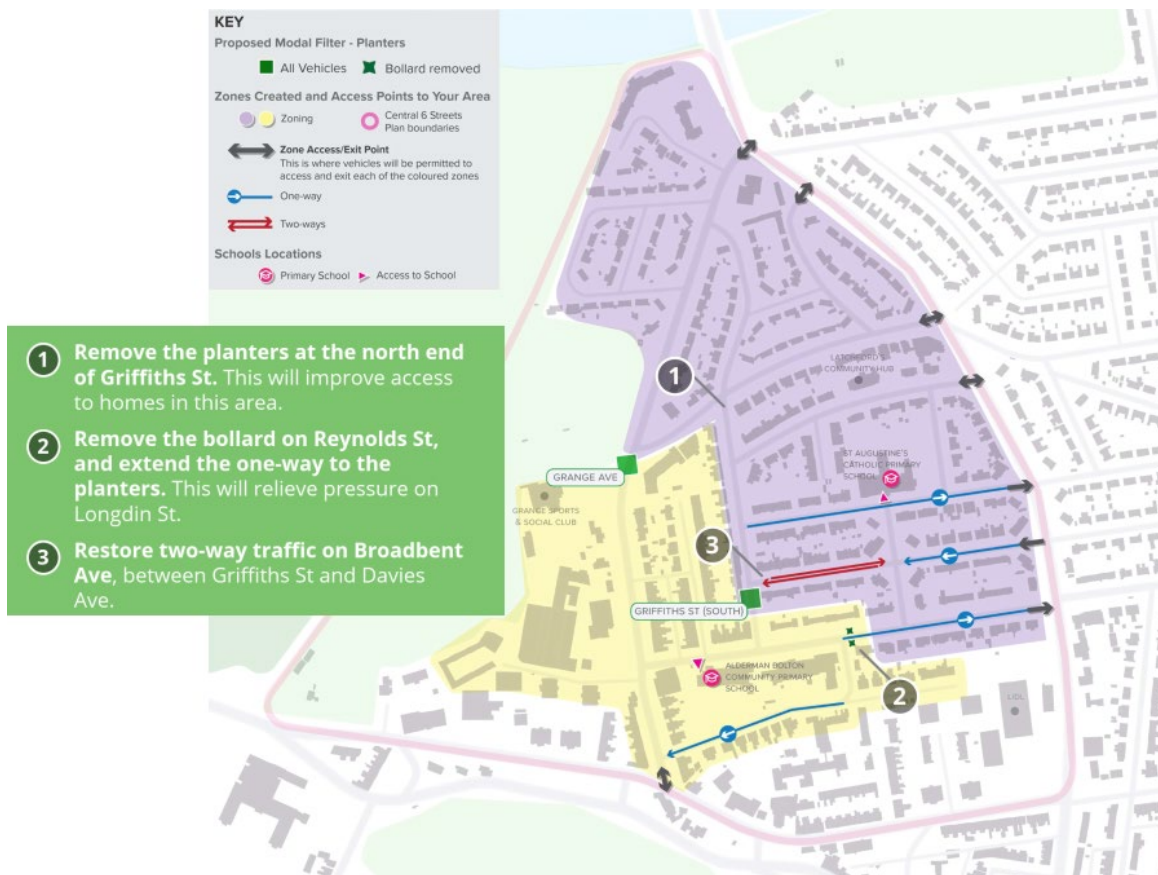


Figure 4 Changes to Westy LTN scheme made in November 2022

Highway Network Impacts

The main objectives of the LTN trial are to reduce through-traffic within the LTN area and reduce motorised vehicle movements across the neighbourhood – improving pedestrians’ and cyclists’ comfort, traffic noise within the residential area and air quality.

Therefore, monitoring changes in traffic trends is a vital part of identifying the impacts of the experimental LTN, and this requires observing the number of vehicles accessing the area and the boundary roads, their speed and journey time.

This final Monitoring Report presents various findings from sites across the LTN area, as set out in **Error! Reference source not found.** below:

Site	ID	Location	Data Observed	Period Observed	
A	1041	A50 Kingsway South (north of Grange Avenue)	<ul style="list-style-type: none"> • Vehicular traffic flow • Vehicle classification 	Permanent count site (2019 onwards)	
B	1032	A5061 Knutsford Road			
C	27	A50 Kingsway South (south of Grange Avenue)	<ul style="list-style-type: none"> • Vehicular traffic flow • Vehicle classification • Vehicle speed 	Temporary count sites <ul style="list-style-type: none"> • 16th-27th May 2022 • 27th June - 24th July 2022 • 28th November – 04th December 2022 • 22nd – 28th May 2023 	
D	28	Henshall Avenue			
E	29	Broadbent Avenue			
F	6	Grange Avenue (north)			
G	1	Grange Avenue (south)			
H	11	Reynolds St (west of Davies Ave)			Temporary count sites <ul style="list-style-type: none"> • 13th-19th October 2016 • 28th November – 04th December 2022
I	12	Reynolds St (east of Davies Ave)			

Table 1 Highway Network Interim Data Collection Sites



Figure 5 Highway Network Data Collection Sites Locations

Vehicular Traffic Flows – Boundary Roads (May 2022 to May 2023)

A50 Kingsway South (Site A)

Figure 6 shows the number of vehicles recorded travelling along the A50 Kingsway South by direction, in the AM (7-8) and PM (16-17) peak hours. Figure 7 shows the daily total flows by direction on the same route.

Since the LTN was installed, a small decrease in the number of vehicles travelling during the AM Peak has been observed. In the PM Peak, southbound flows have stayed broadly similar, but northbound flows have decreased. When considering daily total traffic flows, the number of vehicles travelling southbound on this route has increased, while the number travelling northbound has decreased. A small number of sharp drops in traffic flows were observed, most noticeable in the AM peak. These are associated with school holidays, which are marked in grey.

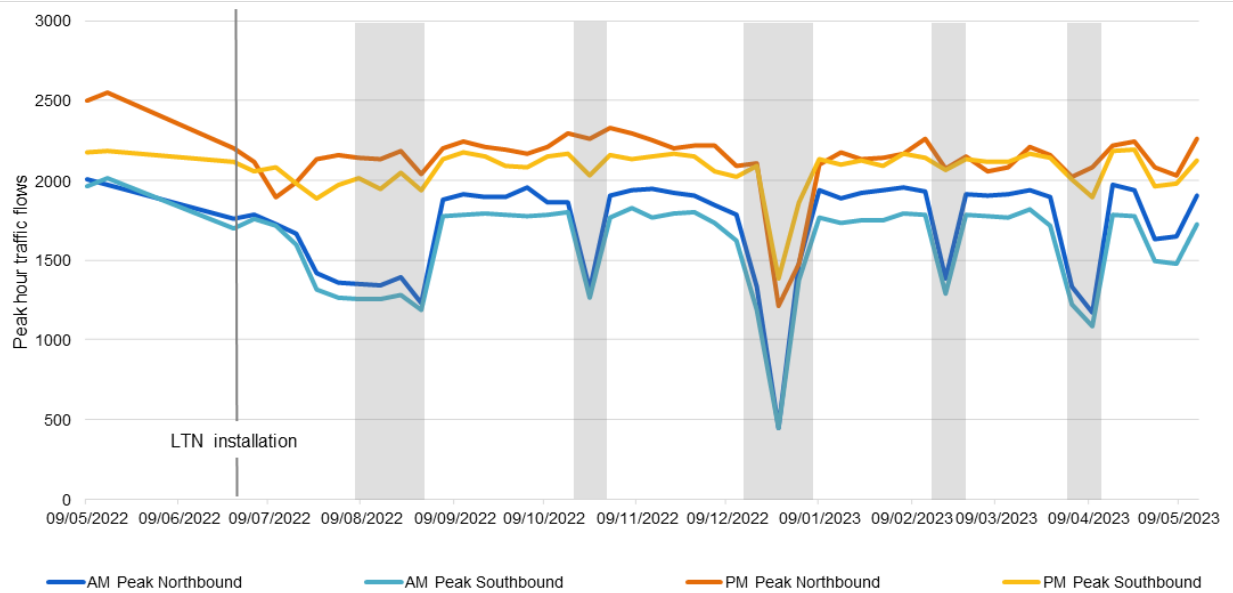


Figure 6 A50 Kingsway South (Site A): Vehicular Traffic Flows – Weekday Peak Hours

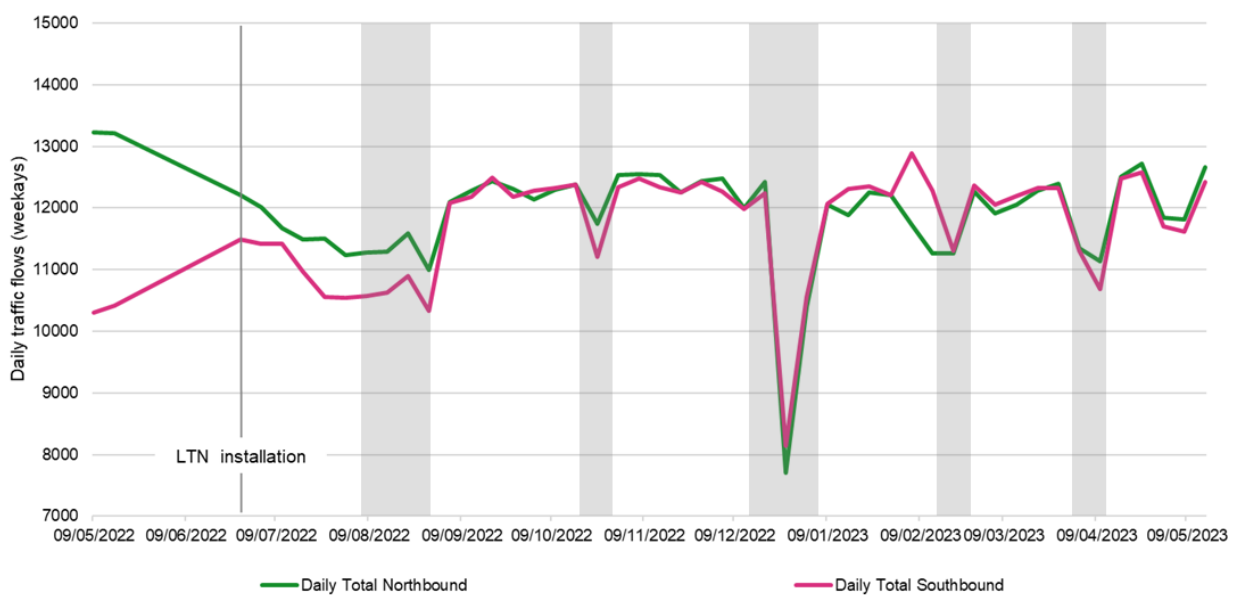


Figure 7 A50 Kingsway South (Site A): Vehicular Traffic Flows – Weekday Totals

Data source: data up to May 2023 taken from permanent ATC (Automatic Traffic Counts).

A5061 Knutsford Road (Site B)

Figure 8 shows the number of vehicles recorded travelling along A5061 Knutsford Road by direction, in the AM (7-8) and PM (16-17) peak hours. Figure 9 shows the daily total flows by direction on the same route.

Outside of the school holidays, which are marked in grey, there has not been a substantial change in the traffic flows between pre- and post-installation.

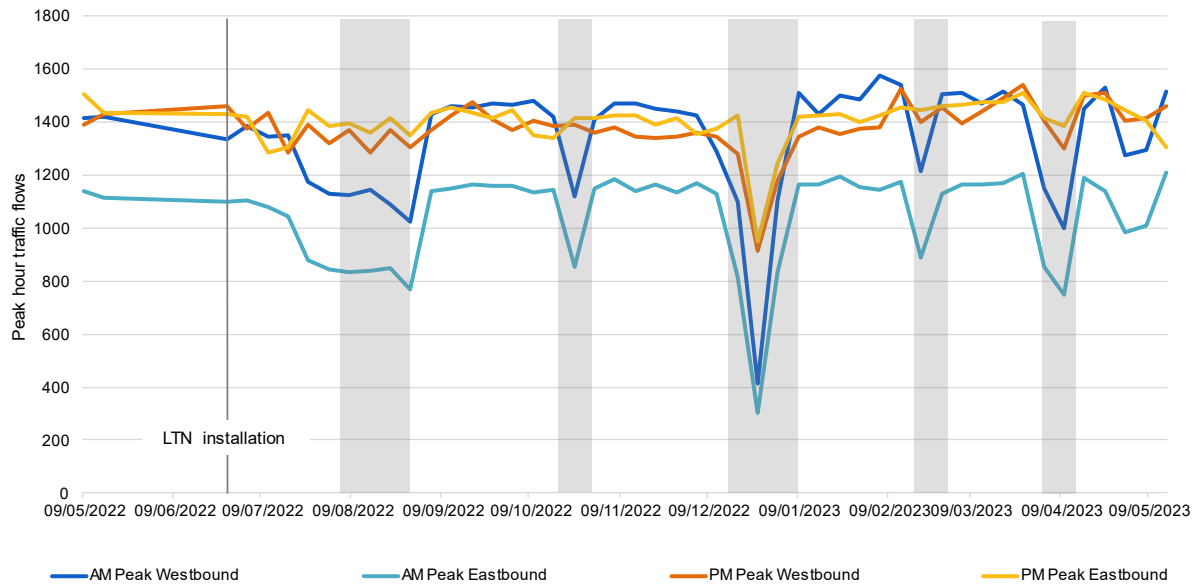


Figure 8 A5061 Knutsford Road (Site B): Vehicular Traffic Flows – Weekday Peak Hours

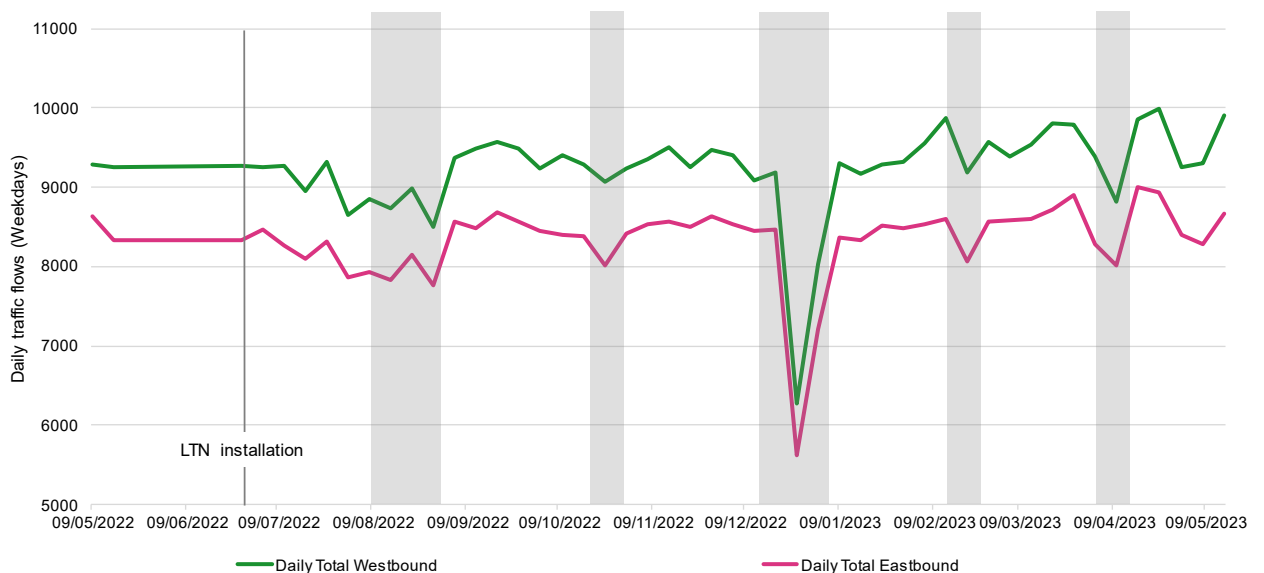


Figure 9 A5061 Knutsford Road (Site B): Vehicular Traffic Flows – Weekday Totals

Data source: data up to May 2023 taken from permanent ATC (Automatic Traffic Counts).

Vehicular Traffic Flows – Boundary Roads (2019 versus 2022/2023)

A50 Kingsway South (Site A)

Figure 10 shows the 24-hour mid-week daily average number of vehicles travelling along A50 Kingsway South, in both directions, for comparative weeks in 2019, 2022 and 2023 up to May. The data presented here is taken from the permanent Automatic Traffic Counters, and shows the 24-hour mid-week daily average (Tuesdays, Wednesdays and Thursdays).

Figure 11 shows the 24-hour mid-week daily average number of vehicles in the southbound right turn lane (RTL) towards Grange Avenue. It can be seen that the number of vehicles in the right turn lane decreased dramatically following the LTN’s installation in week 25 of 2022.

Overall, the number of vehicles using A50 Kingsway South remains below pre-Covid levels.

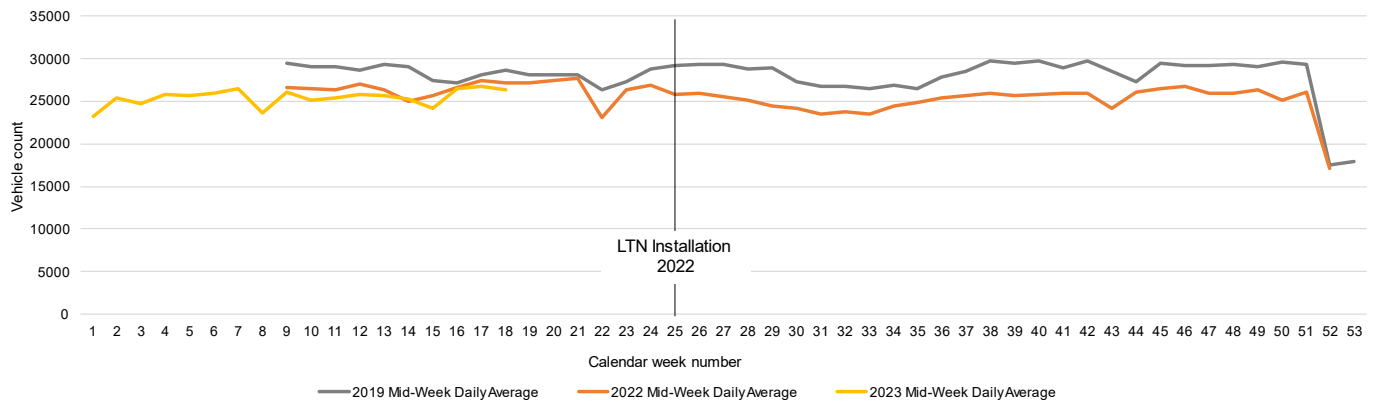


Figure 10 A50 Kingsway South (Site A): Vehicular Traffic Flows – 24hr Mid-Week Average (2019 v 2022/2023)

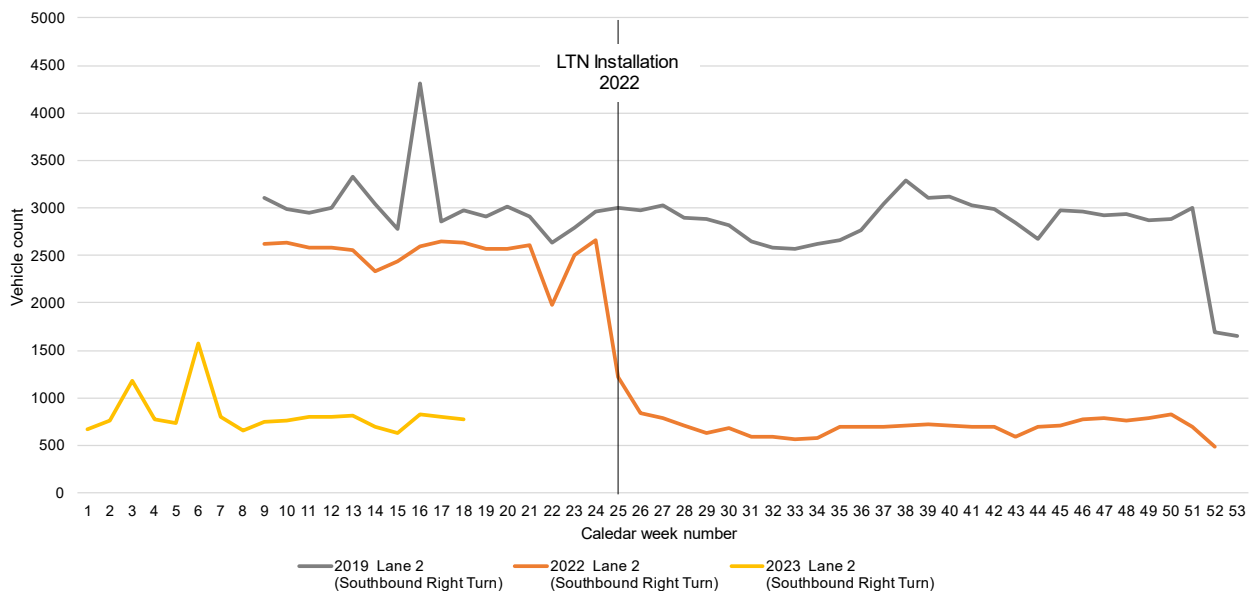


Figure 11 A50 Kingsway South RTL (Site A): Vehicular Traffic Flows – 24hr Mid-Week Average (2019 v 2022/2023)

Data source: data up to May 2023 taken from permanent ATC (Automatic Traffic Counts).

A5061 Knutsford Road (Site B)

Figure 12 shows the number of vehicles travelling along A5061 Knutsford Road, in both directions, for comparative weeks in 2019, 2022 and 2023 up to May, taken from the permanent Automatic Traffic Counters.

Overall, the number of vehicles using A5061 Knutsford Road in 2022 remains below pre-Covid levels. Please note that roadworks in weeks 17 and 18 of 2022 at A5061 Knutsford Road were recorded as the cause of the atypically low flows. There has not been a noticeable change in traffic flows since the LTN’s installation in week 25 of 2022.

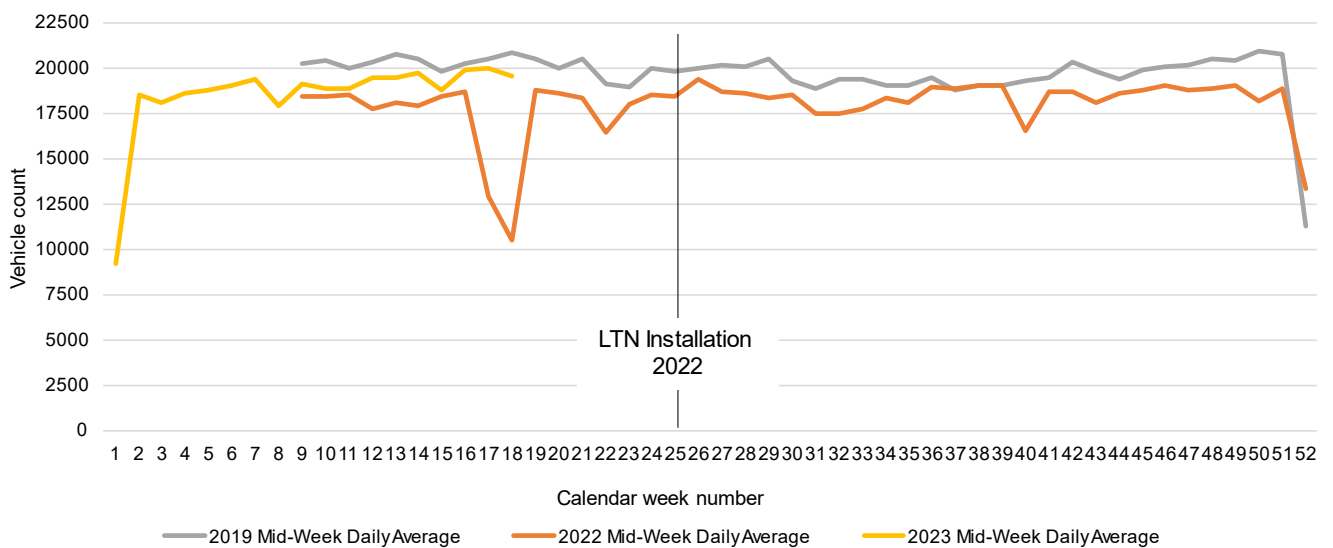


Figure 12 A5061 Knutsford Road (Site B): Vehicular Traffic Flows – 24hr Mid-Week Average (2019 v 2022)

Data source: data up to May 2023 taken from permanent ATC (Automatic Traffic Counts).

Vehicular Traffic Flows Observed Changes – Pre- & Post-Installation

Figure 13 to Figure 19 show average hourly weekday traffic flows at seven sites around the LTN, for a week in December 2022, a week in May 2023 and where available, any earlier data at the same site.

Grange Avenue

Flows on Grange Avenue, south of the modal filter, were substantially lower in December 2022 and May 2023 than before the LTN’s installation. North of the modal filter, only December 2022 and May 2023 data is available; it can be seen that 08:00 and 15:00 are the busiest hours of the day, coinciding with school run journeys.

Data source: data up to May 2023 as recorded from temporary ATCs.

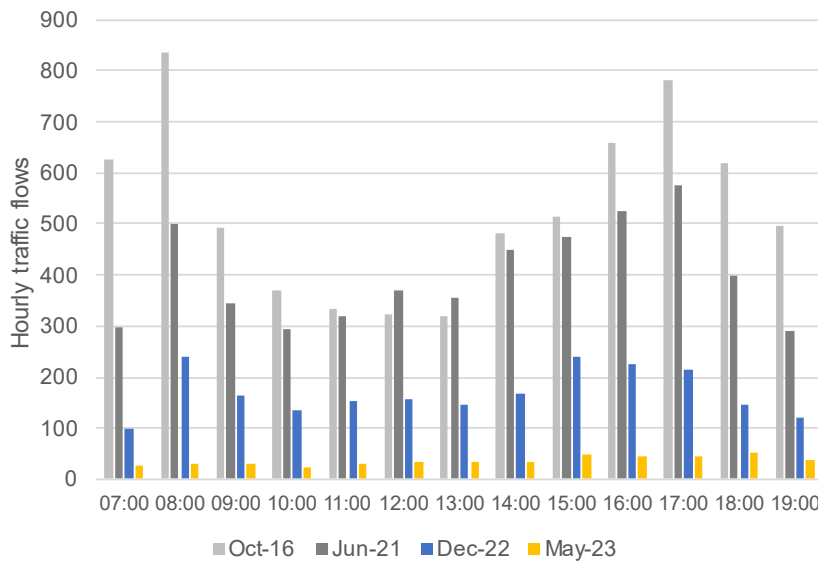


Figure 13 Average weekday hourly traffic flows at Grange Avenue (South of modal filter)

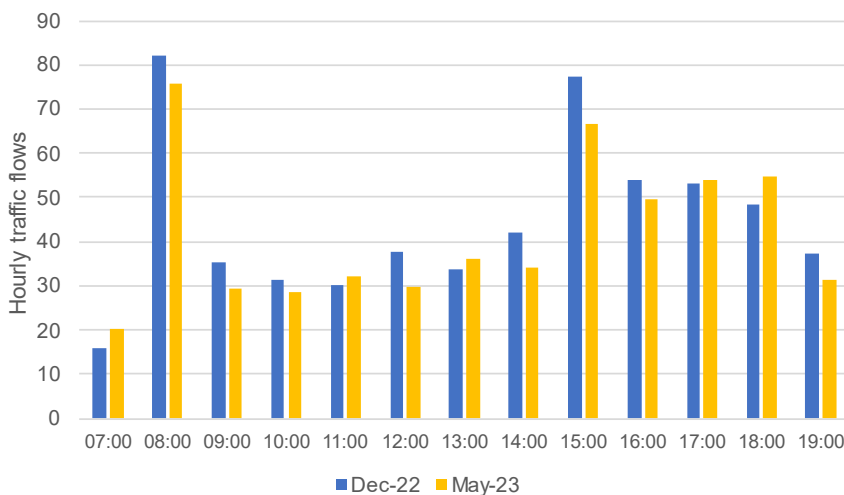


Figure 14 Average weekday hourly traffic flows at Grange Avenue (North of modal filter)

Griffiths Street, Henshall Avenue and Broadbent Avenue.

Pre and post-installation flows are available for Henshall Avenue (Figure 16) and Broadbent Avenue (Figure 17). Since the installation of the LTN, on Henshall Avenue and Griffiths Street, the average hourly flows have increased throughout most hours of the day. However, it is worth noting that flows remain comparatively low overall.

In December 2022, the highest hourly flows were never more than 40 vehicles, and for most of the day remained below 20 vehicles per hour. In May 2023 the highest hourly flows were never more than 44 vehicles, and for most of the day remained below 30 vehicles per hour.

Flows on Griffiths Street (Figure 15) peak at 08:00 and 15:00, in line with the other streets. In December 2022 flows remained below 20 vehicles per hour for most of the day, with a maximum of 48 vehicles per hour at 08:00. In May 2023 flows remained below 20 vehicles per hour for most of the day, with a maximum of 22 vehicles per hour at 08:00 and 15:00.

Data source: data up to May 2023 as recorded from temporary ATCs.

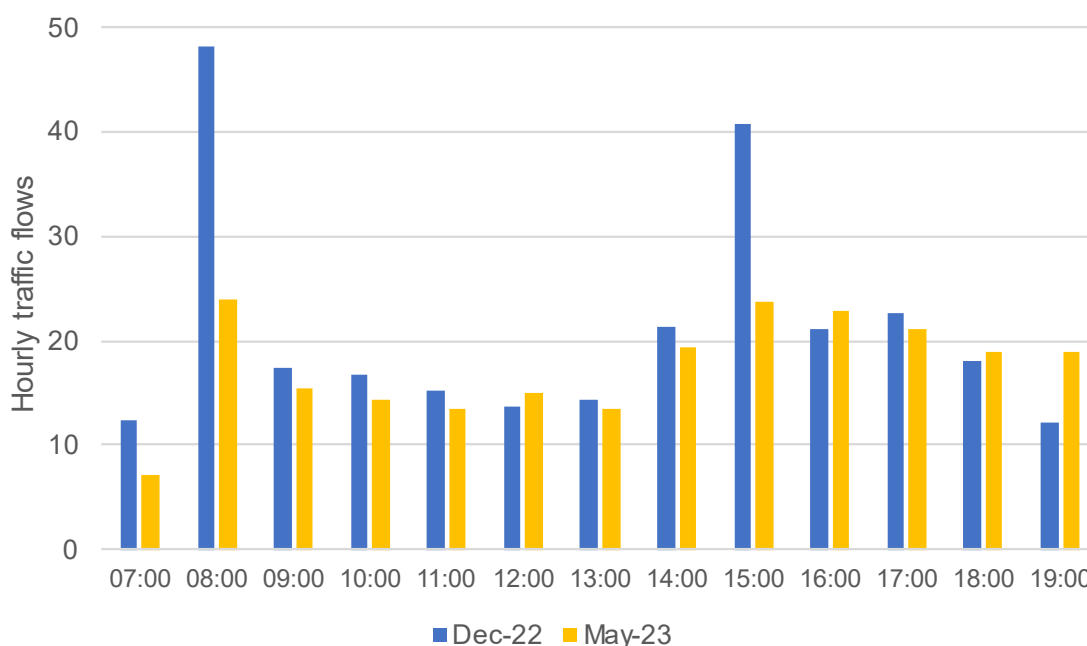


Figure 15 Average weekday hourly traffic flows at Griffiths Street

Westy LTN Monitoring Report

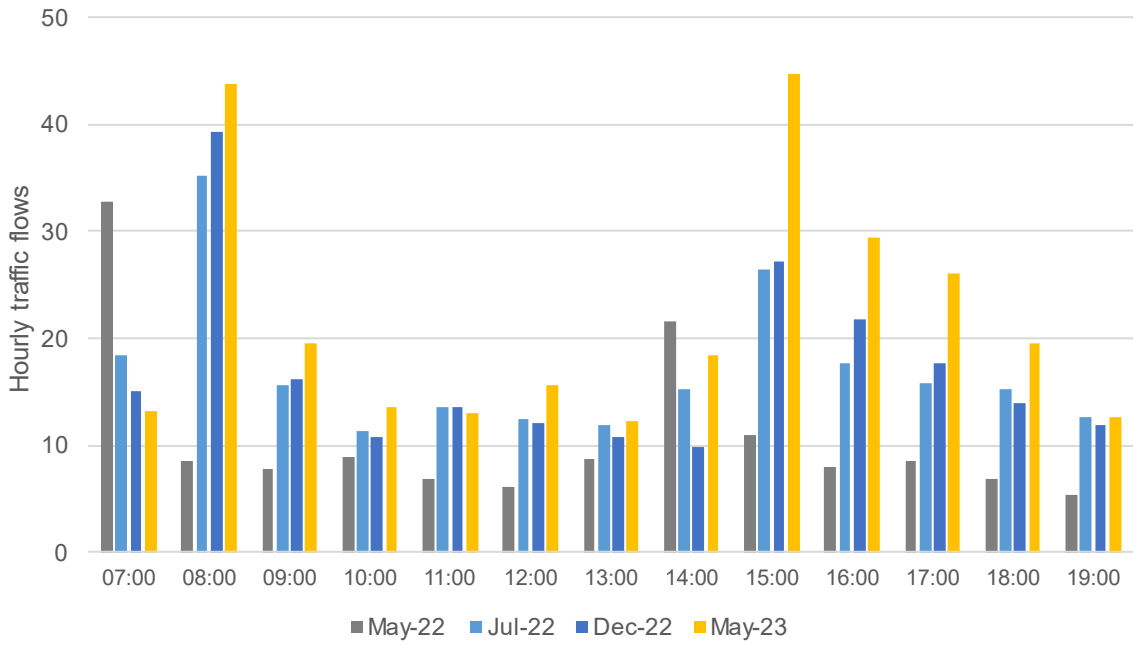


Figure 16 Average weekday hourly traffic flows at Henshall Avenue

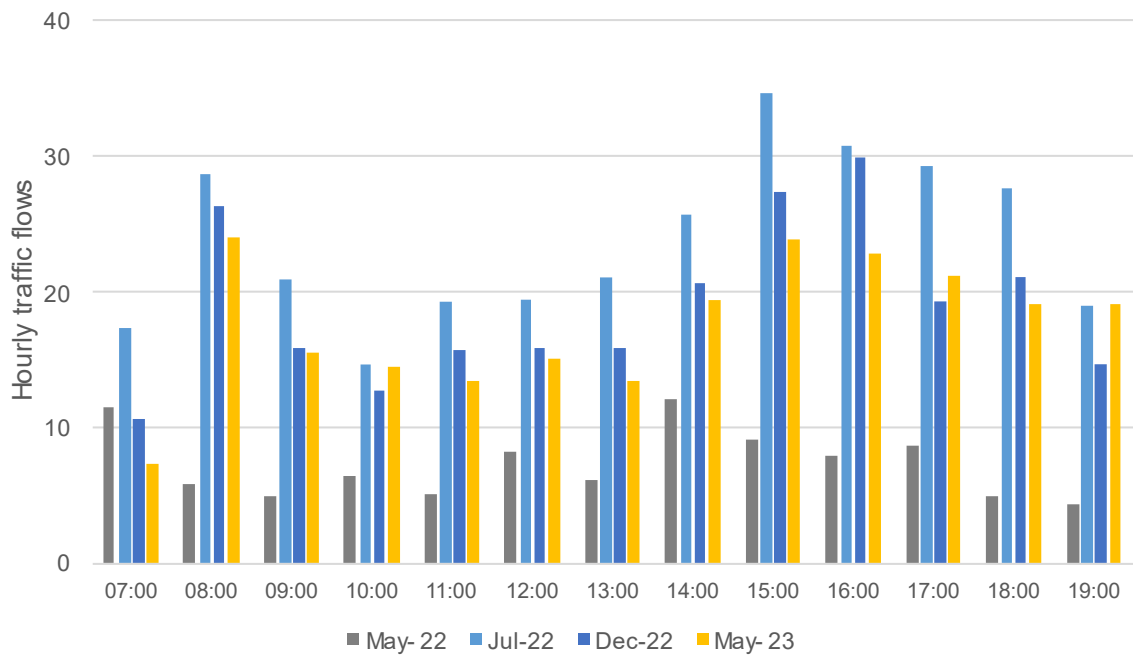


Figure 17 Average weekday hourly traffic flows at Broadbent Avenue

Reynolds Street

Pre and post-installation flows are available for Reynolds Street both east and west of Davies Avenue. There are no 2023 post-installation data for Reynolds Street West because the bollard on that side of the street was removed as part of November 2022’s LTN changes. Since the installation of the LTN, it can be seen that flows have decreased to the west of Davies Avenue, particularly during the peak hours (08:00 and 16:00-17:00), but to the east of Davies Avenue, flows have mostly increased a little, with noticeably larger increases at 15:00-17:00. On Davies Avenue, only eastbound movements are permitted.

Data from December 2022 found that approximately 37 cars per day made a non-permitted westbound movement, which accounted for 9% of all movements along Reynolds Avenue, west of Davies Avenue.

Data from May 2023 found that approximately 49 cars per day made a non-permitted westbound movement, which accounted for 5% of all movements along Reynolds Avenue, west of Davies Avenue.

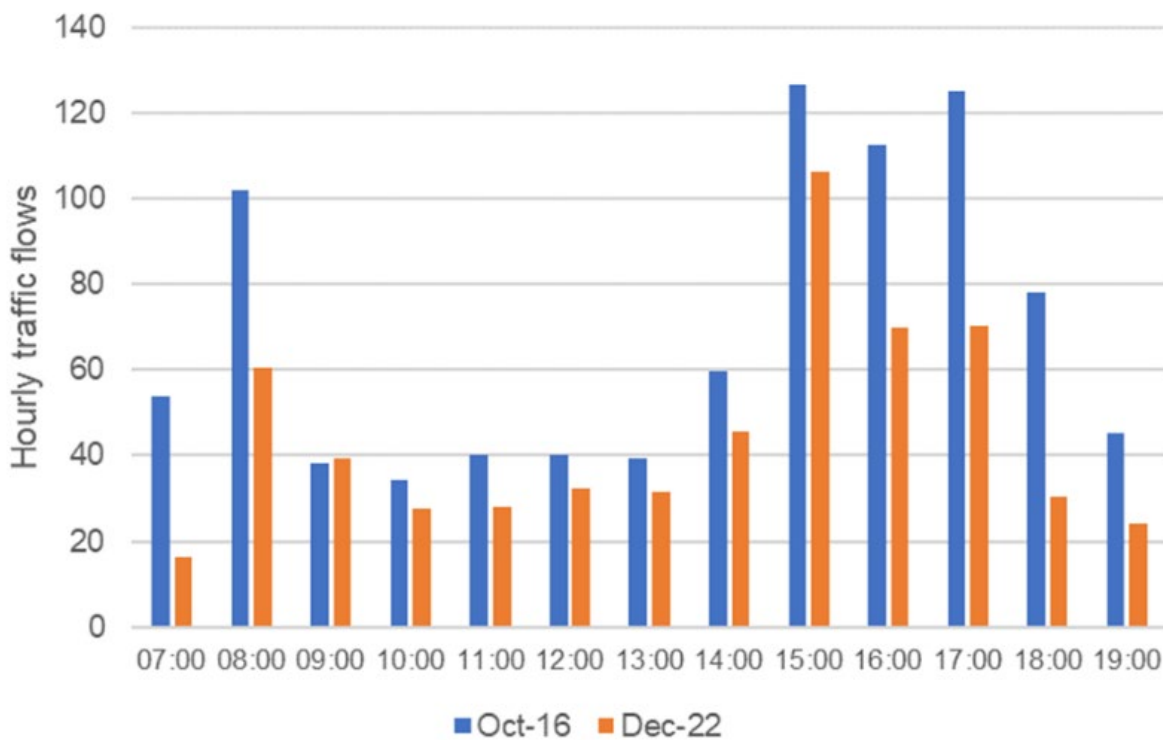


Figure 18 Average weekday hourly traffic flows at Reynolds St (west of Davies Ave)

Westy LTN Monitoring Report

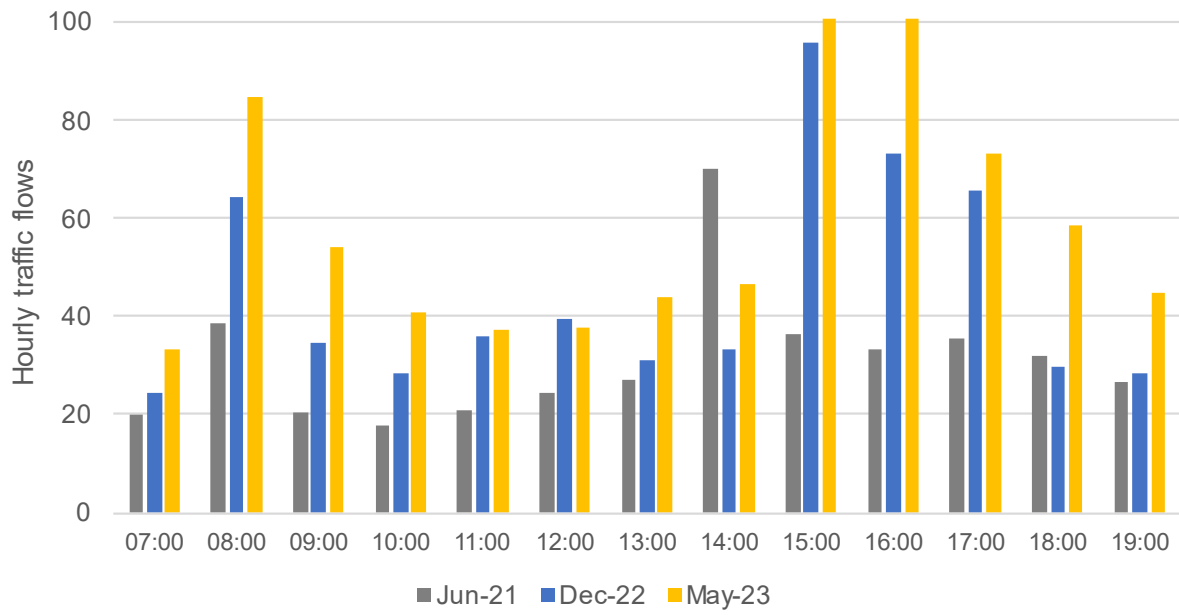


Figure 19 Average weekday hourly traffic flows at Reynolds St (east of Davies Ave)

Vehicular Traffic Mix

Figure 20 to Figure 22 show the mix of vehicular traffic pre- and post-installation on A50 Kingsway South as a boundary road and on two internal routes (Henshall Avenue and Broadbent Avenue). The pre-installation data was taken for one neutral week in May 2022, and the post-installation data is the average of four weeks of weekday flows in July 2022, one week in December 2022 and one week in May 2023 (for Henshall Avenue and Broadbent Avenue only).

The mix of traffic has not significantly altered at any of the monitored locations.

Data source: data up to May 2023 as recorded from temporary ATCs.

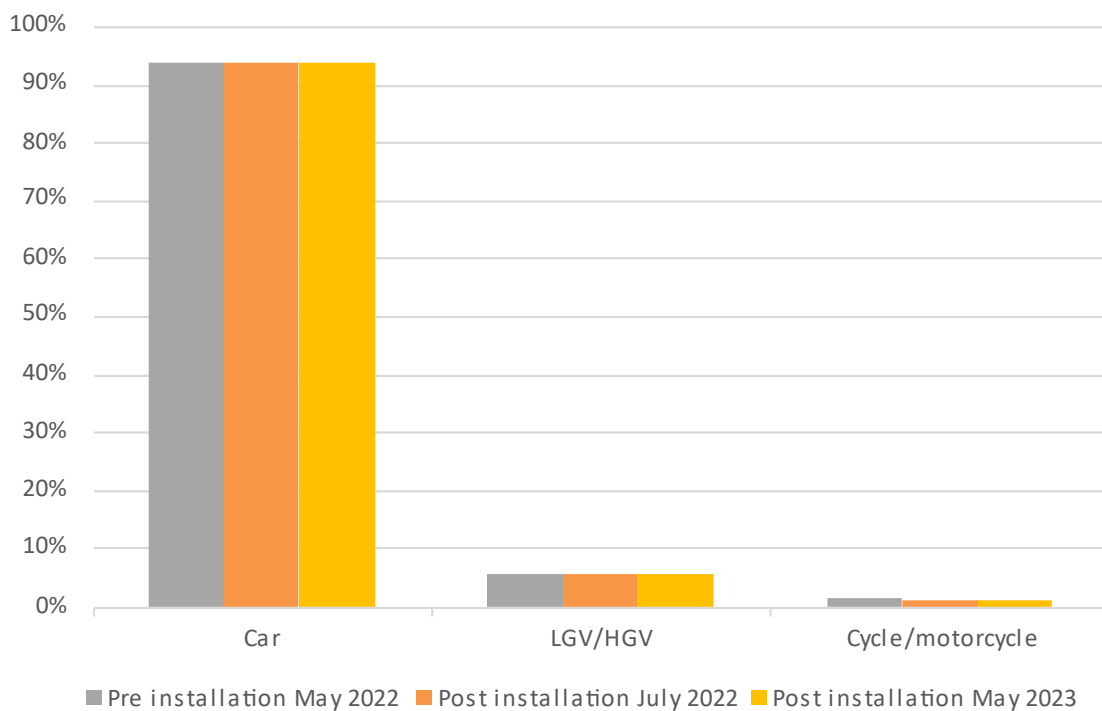


Figure 20 Kingsway South: Vehicular Traffic mix – Pre- and Post-Installation

Westy LTN Monitoring Report

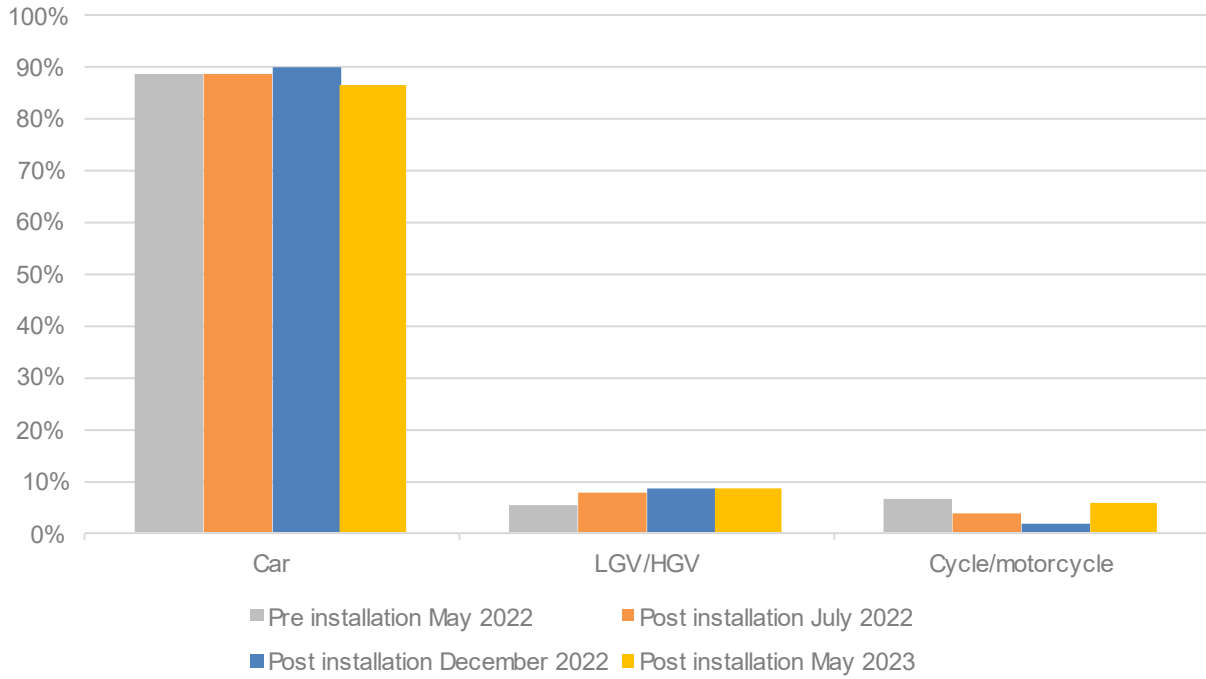


Figure 21 Henshall Avenue: Vehicular Traffic Mix – Pre- and Post-Installation

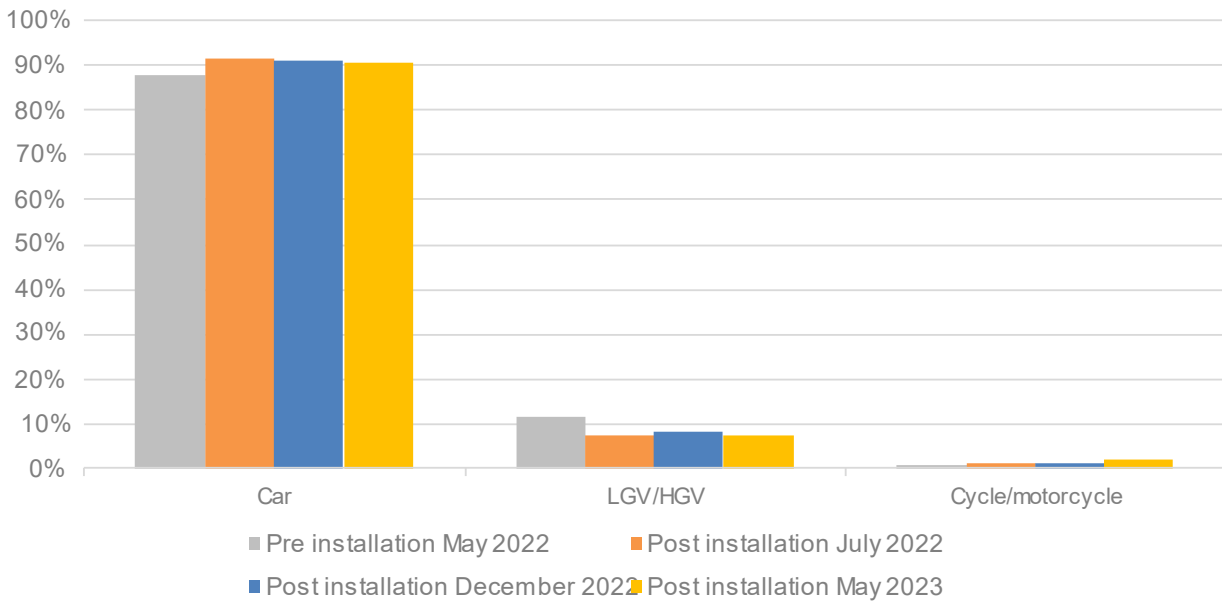


Figure 22 Broadbent Avenue: Vehicular Traffic mix – Pre- and Post-Installation

Vehicular Traffic Speeds

Figure 23 to Figure 25 show recorded traffic speeds pre- and post-installation on A50 Kingsway South as a boundary road and on two internal routes (Henshall Avenue and Broadbent Avenue). The average speed is shown in grey, the 85th percentile in green and the percentage of traffic travelling over the posted speed limit (PSL) by a black line. The pre-installation data was taken for one neutral week in May 2022, with further monitoring of the impacts carried out over a four-week period in June/July 2022, labelled July 2022 in the charts, a one-week period in December 2022 and a one-week period in May 2023.

The 85th percentile is defined as the speed at or below which 85% of all vehicles are observed to travel under free-flowing conditions past a monitored point. Another way to view this is the speed which 15% of traffic exceeds on average.

The traffic speed monitoring highlighted the following trends:

- The average speeds increased by 2mph on Broadbent Avenue and Henshall Avenue in July and December 2022 but by May 2023 the average increase in speed reduced to 1mph
- The % of vehicles travelling above the speed limit initially increased by 12% on Henshall Avenue and by 8% on Broadbent Avenue. Then fell back towards pre-installation levels on both routes.
- Speeds on A50 Kingsway South have not changed following the LTN installation.

Data source: data up to May 2023 as recorded from Temporary ATCs.

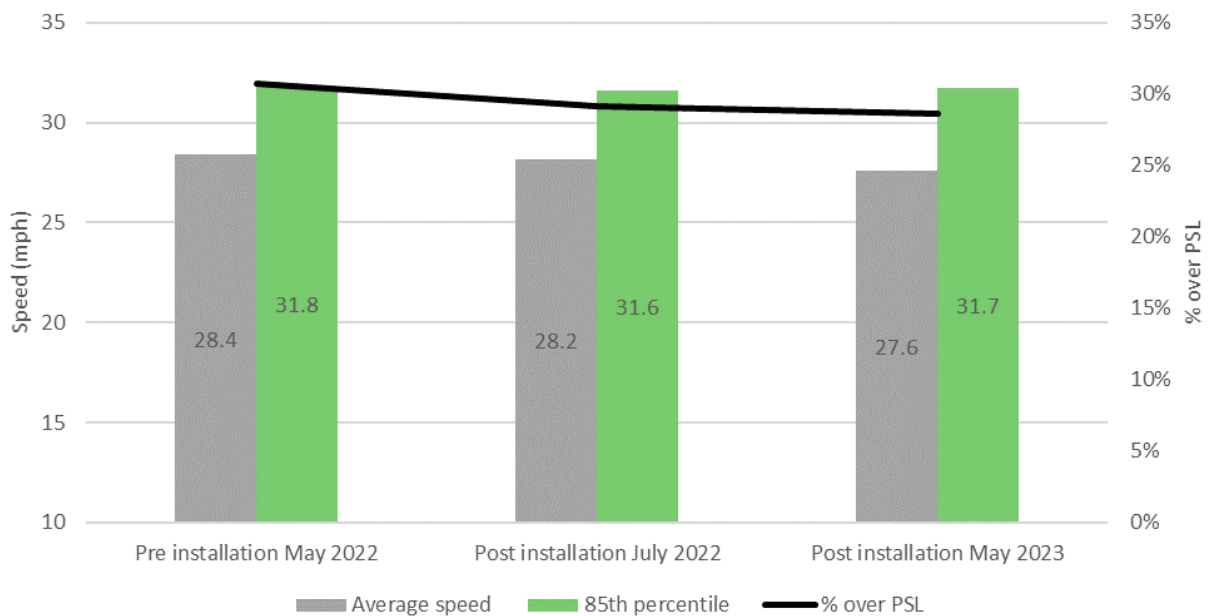


Figure 23 Kingsway South: Vehicular Traffic Speeds – Pre- and Post-Installation

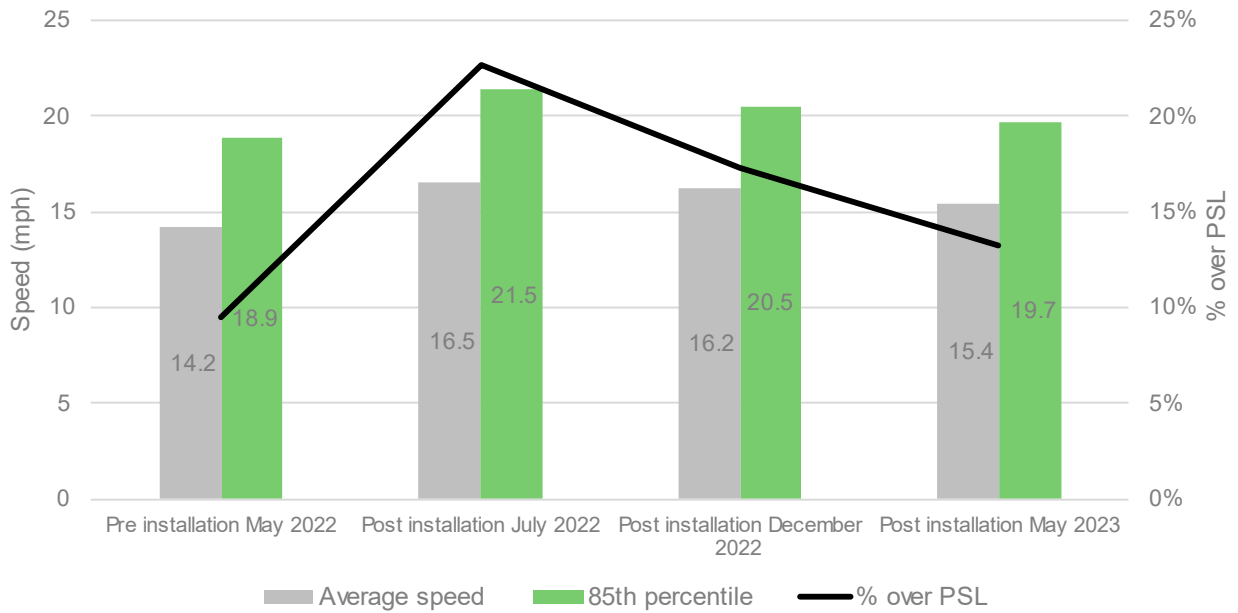


Figure 24 Henshall Avenue: Vehicular Traffic Speeds – Pre- and Post-Installation

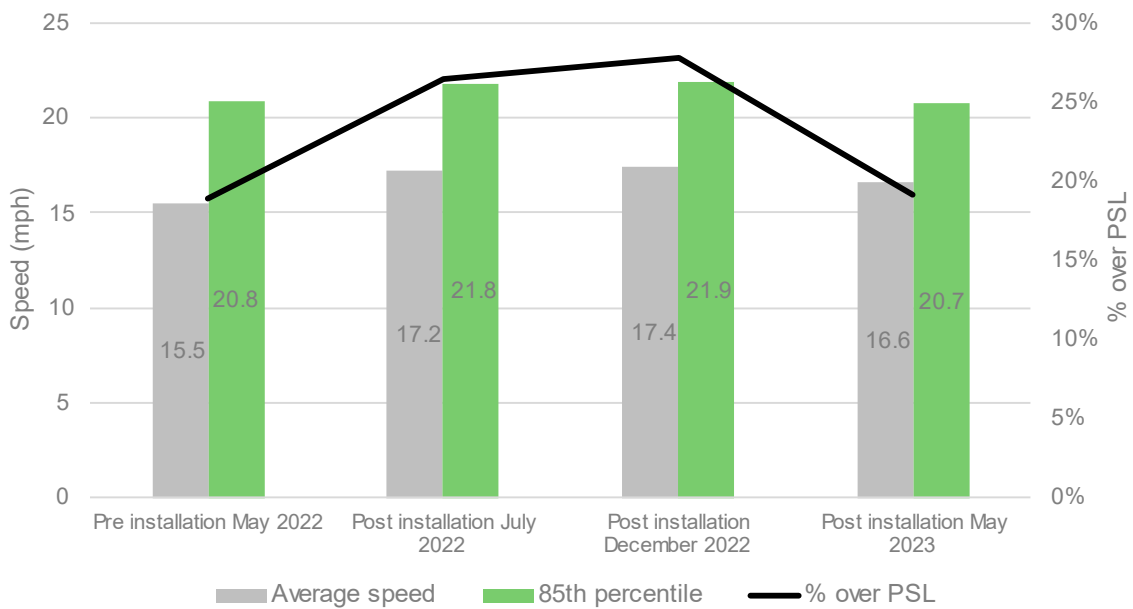


Figure 25 Broadbent Avenue: Vehicular Traffic Speeds – Pre- and Post-Installation

Figure 26 and Figure 27 show the average and 85th percentile speeds for five locations within the LTN in December 2022 and three locations in May 2023. For Grange Avenue, the speed limit is 30mph, whilst on Griffiths Street and Reynolds Street it is 20mph. 85th percentile speeds exceed 20mph on Griffiths Street and Reynolds Street when recorded in December 2022. 85th percentile speeds still exceed 20mph on Reynolds Street (Est) when recorded in May 2023.

85ths exceeding the 20mph as not being unusual for a 20mph speed limit on a residential street. This speed data remains under the Association of Police Officers (ACPO) recommended threshold for enforcement.

Data source: data up to May 2023 as recorded from Temporary ATCs.

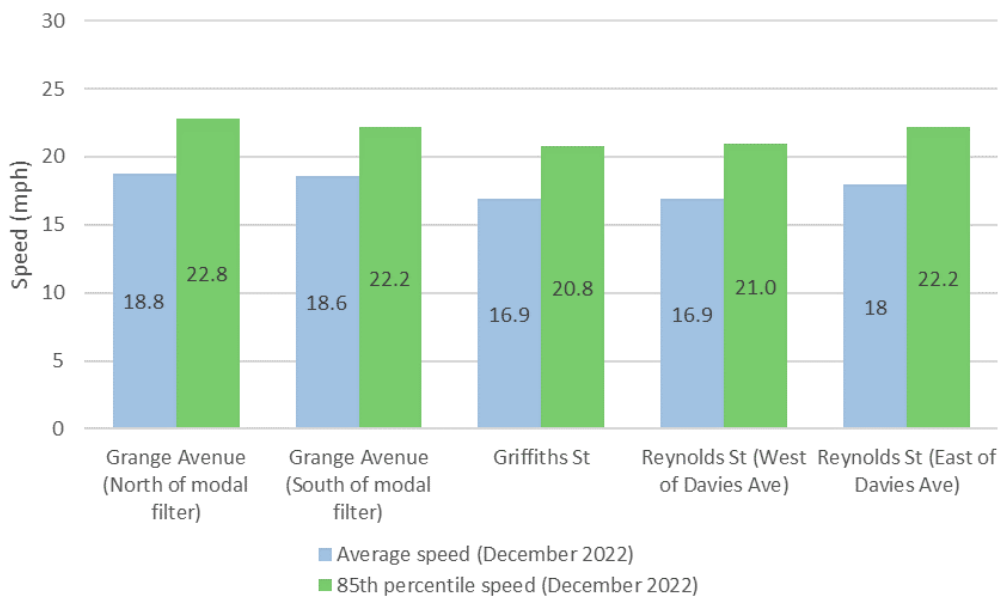


Figure 26 Vehicular Traffic speeds at locations within LTN – December 2022

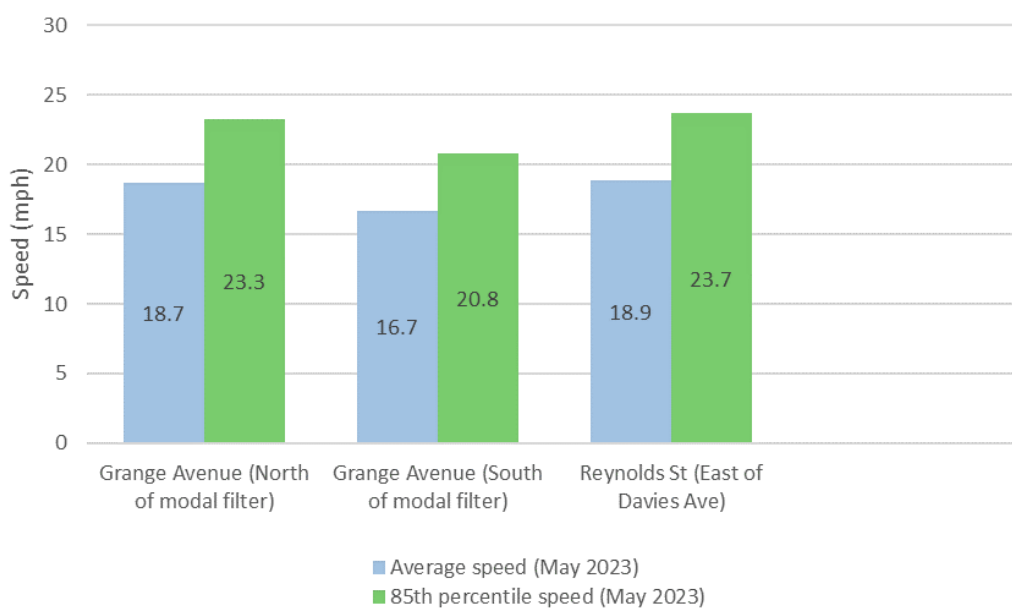


Figure 27 Vehicular Traffic speeds at locations within LTN – May 2023

Active Travel data

Figure 28 compares weekday hourly flows of pedestrians and cyclists movements between July 2021 and May 2023 – before and after the LTN installation. Figure 29 shows the weekday daily flows of pedestrians and cyclists/scooters on Grange Avenue, at the site of the LTN modal filter, from before and after installation – as per data recorded between 6am and 9pm.

It can be seen that the number of cyclists has not changed between July 2021 and December 2022, but the number of pedestrians increased by 50% from 448 to 672 pedestrian movements per weekday. In July 2021, the highest flows were at 8am and 3pm; in December 2022, 9am and 4pm were the busiest hours.

Data recorded in May 2023 show a further increase in pedestrian flows going up to 734 movements per weekday. This accounts for +64% in comparison with 2021 trends. In May 2023, 8am and 3pm were the busiest hours. Recorded cyclists movements were up to 163 in May 2023 and this accounts for a +36% in comparison with July 2021.

Data source: data as recorded using temporary camera survey between 6am-9pm.

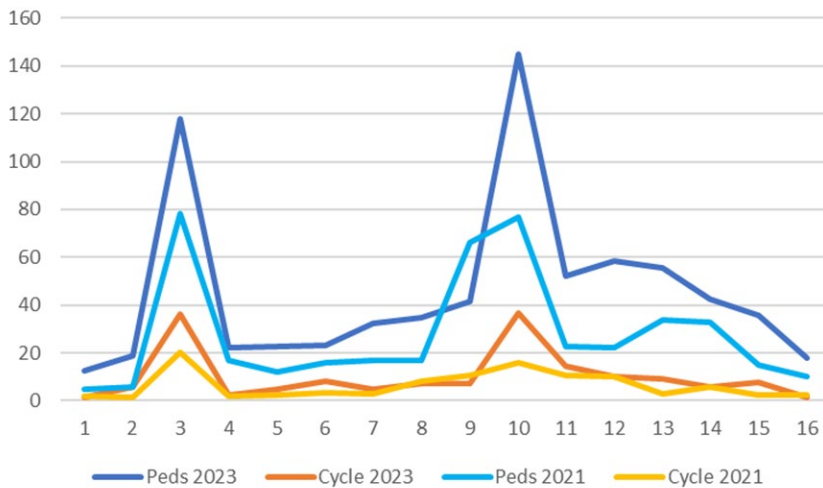


Figure 28 Grange Avenue: Weekday hourly average flow of pedestrians and cyclists

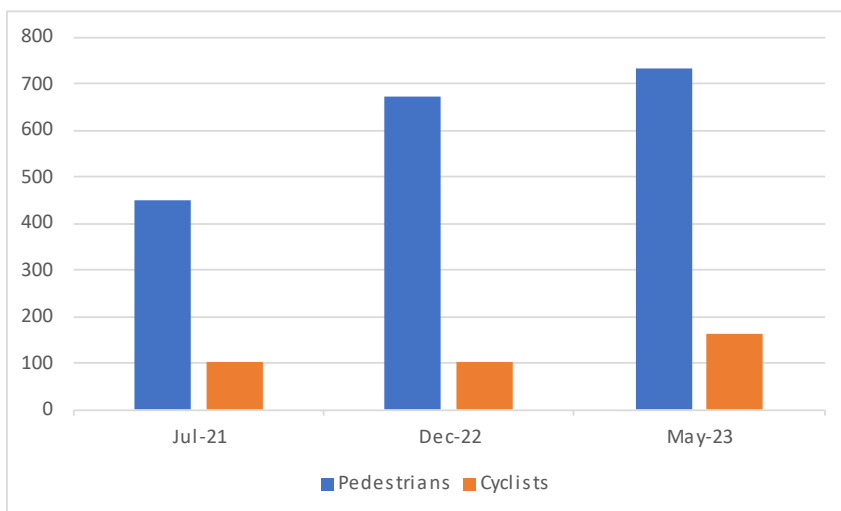


Figure 29 Grange Avenue: Weekday daily flows of pedestrians and cyclists

Travel to School

There are two primary schools within the Westy LTN boundary:

- St Augustine Primary school
- Alderman Bolton Community Primary School

Tables 2 and 3 show the mode of travel to school for all years groups comparing 2018 trends with 2022 pre-installation and 2023 post-installation trends. Data source: data as recorded by School Travel Surveys.

Hand Up Survey – Alderman Bolton							Post Installation Change
Mode of travel to school	2018 Baseline	%	2022 pre installation	%	2023 post installation	%	2022 vs 2023
Car	98	39%	93	39%	95	34%	-5%
Bus	2	1%	2	1%	4	1%	+1%
Walk	132	53%	148	60%	173	62%	+2%
Bike / Scooter	17	7%	-	0%	8	3%	+3%
Other	1	0%	-	0%	-	0%	0%
Total	250	100%	246	100%	280	100%	

Table 2 Alderman Bolton School – Mode of Transport to School - Hands Up Surveys

Hand Up Survey –St Augustine							Post Installation Change
Mode of travel to school	2018 Baseline	%	2022 pre installation	%	2023 post installation	%	2022 vs 2023
Car	41	32%	51	34%	43	26%	-8%
Bus	2	2%	1	1%	3	2%	+1%
Walk	61	48%	85	57%	110	65%	+8%
Bike / Scooter	22	17%	12	8%	12	7%	-1%
Other	1	1%	-	0%	-	0%	0%
Total	127	100%	149	100%	167	100%	

Table 3 St Augustine School – Mode of Transport to School - Hands Up Surveys



Vehicular Journey Times

Table 4 and Figures 30 and 31 show the selection of routes where the average vehicular journey times have been recorded. The re-routing following the installation of the LTN features made routes (*) B, D and E longer in distance as shown in Figure 31.

Six routes (A-F) originate within the neighbourhood and terminate at key locations across Warrington. Route F originates outside of the LTN and runs north-south on A50 Kingsway South. Some of the routes have been adapted following the LTN installation, due to the filtering and redirection of vehicular traffic.

	Origin	Destination
A	106-116 Grange Avenue	Novelis Recycling Centre
B*	42-52 Grange Avenue	Sainsbury's Church Street
C	12-30 Griffiths Street	Warrington Central Station
D*	106-116 Grange Avenue	Loushers Lane Bridge over Black Bear Park
E*	Padgate Station	42-52 Grange Avenue
F	School Road	Knutsford Road

Table 4 Vehicular Journey Time Monitoring – Origins & Destinations

AM and PM Peak journey times have been monitored weekly since the LTN's installation, on a Wednesday, using Google Maps live traffic. This is subsequently compared against the pre-installation times.

The following pages show the journey time trends pre- and post-installation of the LTN. It should be noted that journey times can vary depending on a number of factors beyond the impacts of the LTN interventions - these include roadworks, closures, accidents and weather-related events. Information on these external factors was recorded through the full monitoring process to help understand the cause of relevant delays.

Data source: data up to May 2023 as recorded by Google Maps Live Traffic.

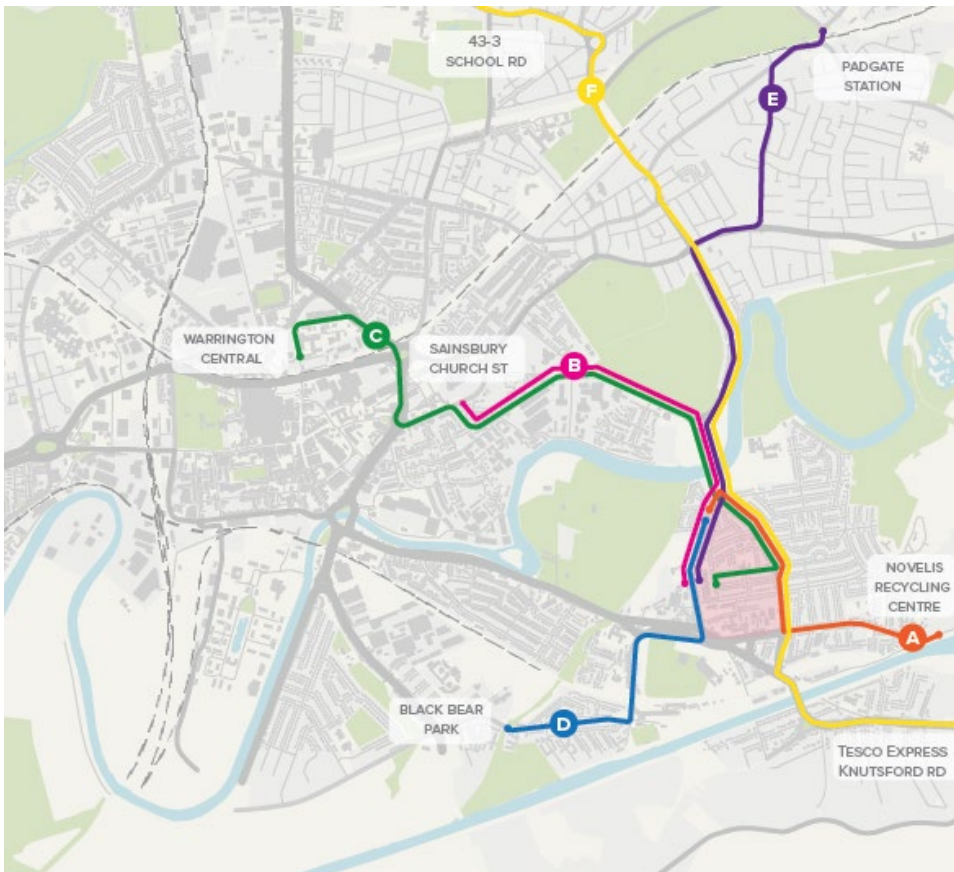


Figure 30 Highway Journey Time Monitoring – Pre-Installation Routes



Figure 31 Highway Journey Time Monitoring – Post-Installation Routes

Route A - Grange Avenue to Novelis Recycling Centre Route unchanged by LTN closures

Figure 32 shows the typical pre-installation vehicular journey times and the observed post-installation journey times for Route A during AM and PM peak periods. Grey shading indicates months with school holidays. The exact dates of school holidays vary between years and schools.

The two vertical arrows on the left show the typical range of journey times by peak, pre-installation. The journey times recorded post-installation have stayed within the pre-installation range – with the exception of some PM spikes during May. It is relevant to note that a series of road closures due to work and accidents were recorded along or near the route during the post-LTN monitoring period – both in the AM and PM.

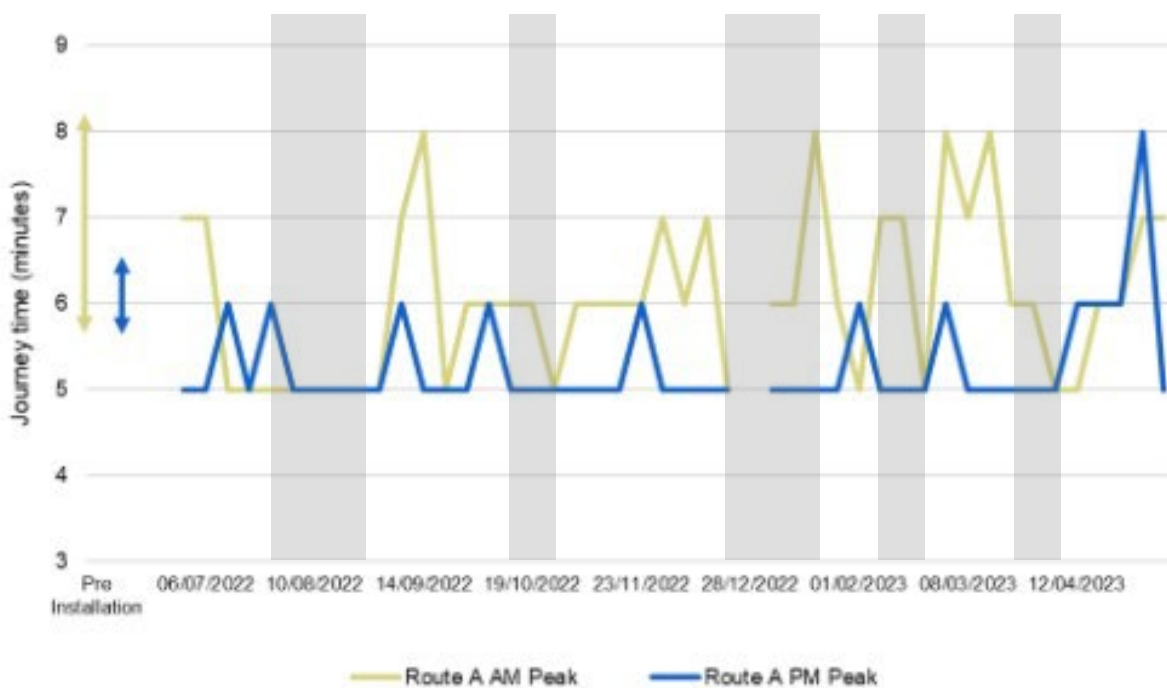


Figure 32 Route A: Pre- and Post-Installation Journey Times - AM and PM Peak

Route B - Grange Avenue to Sainsburys, Church Street

Route distance increased due to LTN closures

Figure 33 shows the typical pre-installation vehicular journey times and the observed post-installation journey times for Route B during AM and PM peak periods.

The two vertical arrows on the left show the typical range of journey times by peak, pre-installation. The journey times recorded post-installation are generally higher than the upper band of pre-installation.

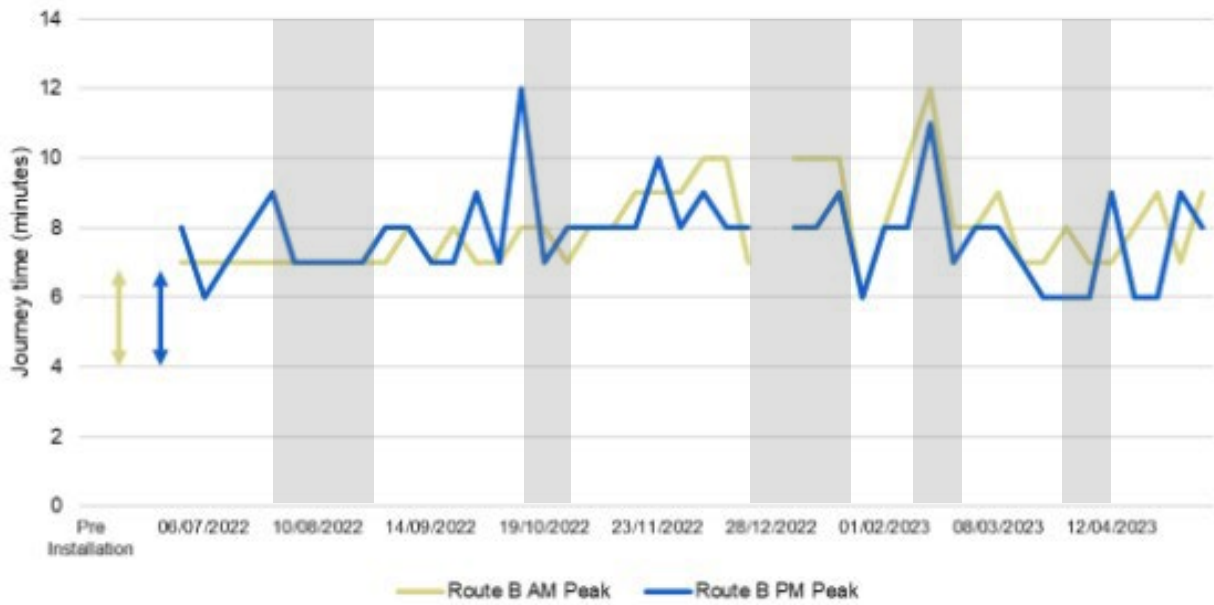


Figure 33 Route B: Pre- and Post-Installation Journey Times - AM and PM Peak

Route C - Griffiths Avenue to Warrington Central Station

Route unchanged by LTN closures

Figure 34 shows the typical pre-installation vehicular journey times and the observed post-installation journey times for Route C during AM and PM peak periods.

The two vertical arrows on the left show the typical range of journey times by peak, pre-installation. The journey times recorded post-installation were generally at the lower end of pre-installation times initially, but have increased over time.

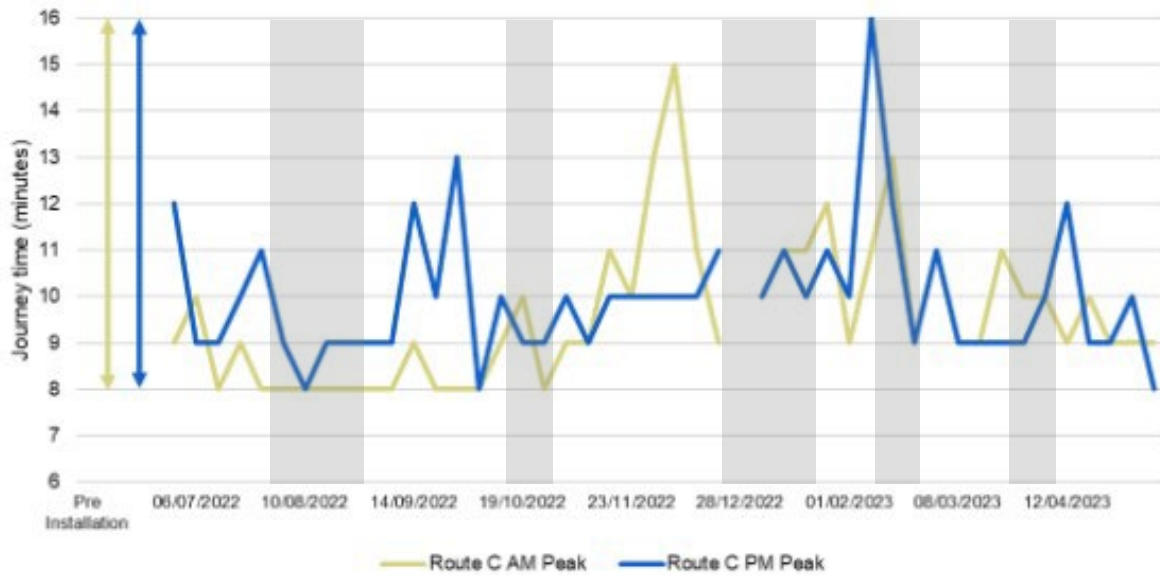


Figure 34 Route C: Pre- and Post-Installation Journey Times - AM and PM Peak

Route D - Grange Avenue to Loushers Lane Bridge over Black Bear Park Route distance increased due to LTN closures

Figure 35 shows the typical pre-installation vehicular journey times and the observed post-installation journey times for Route D during AM and PM peak periods.

The two vertical arrows on the left show the typical range of journey times by peak, pre-installation. The journey times recorded post-installation were generally within the bounds of pre-installation times initially, but have increased in the AM Peak over time.

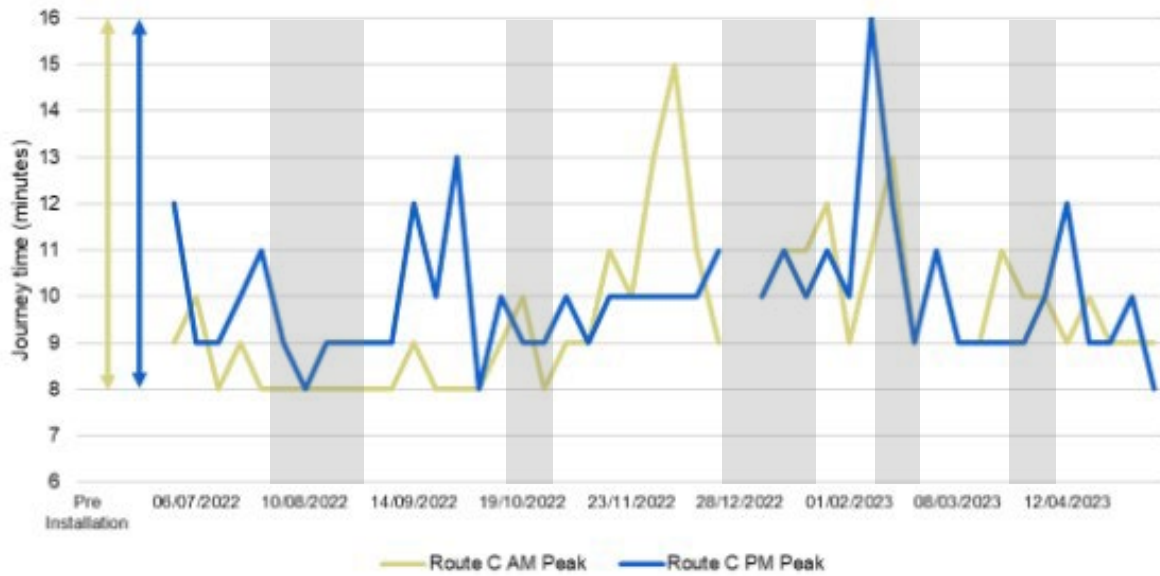


Figure 35 Route D: Pre- and Post-Installation Journey Times - AM and PM Peak

Route E - Padgate Station to Grange Avenue

Route distance increased due to LTN closures

Figure 36 shows the typical pre-installation vehicular journey times and the observed post-installation journey times for Route E during AM and PM peak periods.

The two vertical arrows on the left show the typical range of journey times by peak, pre-installation. The journey times recorded post-installation are generally at the upper end of pre-installation times, with several instances showing journey times exceeding the pre-installation time.

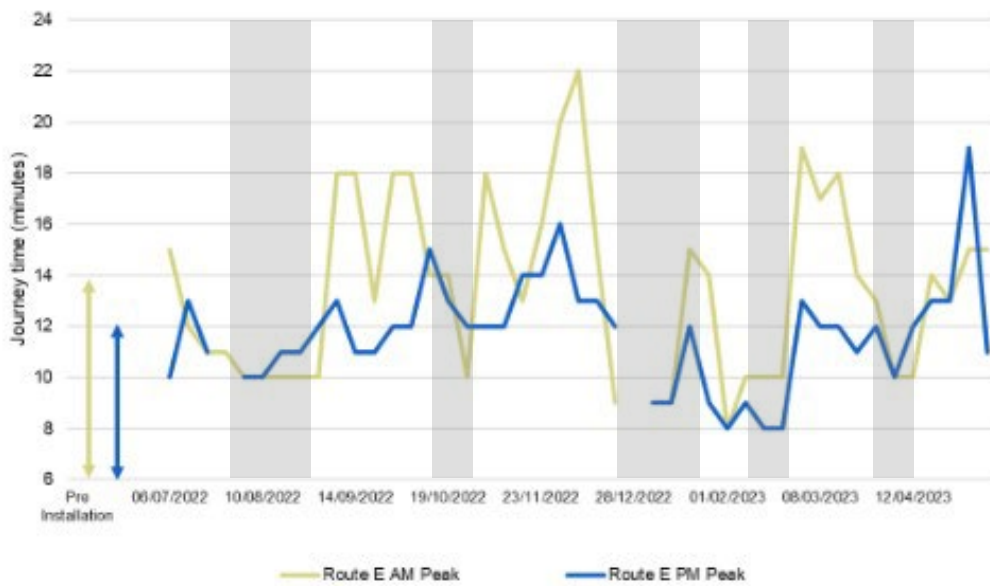


Figure 36 Route E: Pre- and Post-Installation Journey Times - AM and PM Peak

Route F - School Road to Knutsford Road

Route unchanged by LTN closures

Figure 37 shows the typical pre-installation vehicular journey times and the observed post-installation journey times for Route F during AM and PM peak periods.

The typical journey time pre-installation was 14 minutes in both time periods. The journey times recorded post-installation are generally above the pre-installation times with an average of 2-3 mins longer.

Any changes to this longer-distance route using the A50 are likely to be influenced by other factors on the network as well as the LTN changes.

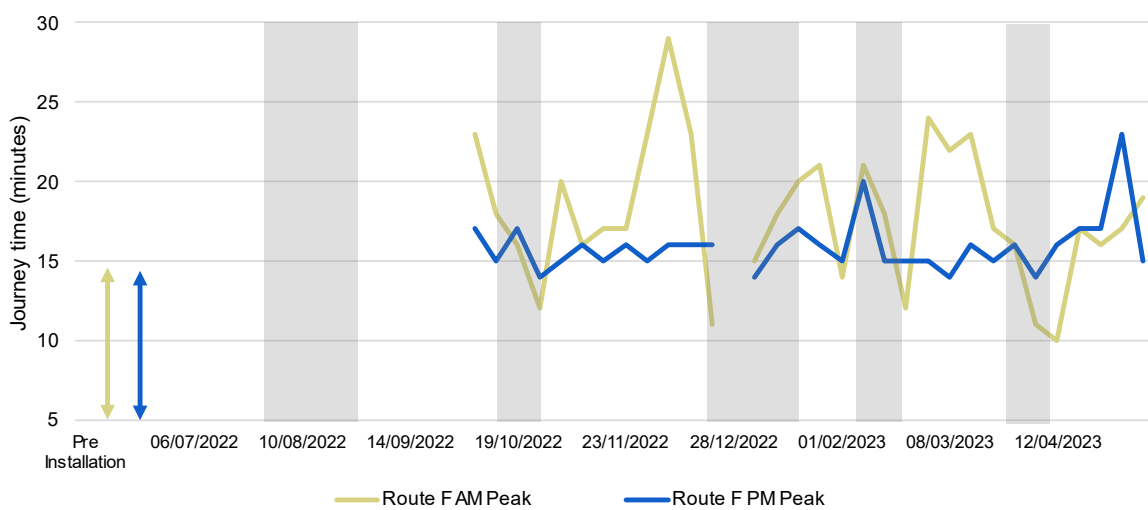


Figure 37 Route F: Pre- and Post-Installation Journey Times - AM and PM Peak

Air Quality

Monitoring Approach

Air quality is a key environmental indicator as pollutants can negatively impact health. To determine air quality in an area, pollutant concentrations are measured, analysed and reported. The calculations are based on the average concentrations of a particular pollutant measured over a period of minimum 3-months.

Warrington Borough Council monitors Nitrogen Oxide (NO₂) levels using diffusion tubes, also known as diffusive samplers, widely used for indicative monitoring of ambient NO₂. This collection method is also the one used in the context of the LTN monitoring as it is particularly useful when dealing with emissions sources such as traffic.

Air quality is influenced by a number of factors other than traffic, including weather conditions, temperatures, wind speed, and air turbulence as they all affect pollutant concentrations.

The data illustrated in the following pages have been recorded at the following locations of diffusion tubes as shown in Figure 38.

The dates of installation vary by site:

- Site WA92 A50 Kingsway South 1: January 2018
- Site WA143 Kingsway South 2: April 2022
- Site WA141 Grange Avenue 1: May 2022
- Site WA142 Grange Avenue 2: April 2022
- Site WA105 Latchford Village 2: January 2018
- Site WA115 Latchford Village 3: January 2018

Overall, the data obtained for the LTN sites mirror the natural seasonal fluctuations seen at other sites across the borough and the current NO₂ levels in the air are meeting the national objective limits which are set based on health grounds.

Data Health Warning: the data presented in this report cover up to April 2023 as recorded using Diffusion Tubes. The results are presented as monthly averages using the raw data, which have not been bias corrected. Annualisation and correction factors will be applied when reporting the results for the WBC Annual Status Report.



Figure 38 NO2 Monitoring Locations

A50 Kingsway South (Site WA92)

Figure 39 and 40 show the average monthly readings for NO2 emission on A50 Kingsway South. Data has been collected at two locations on the route, north and south of A5061 Knutsford Road junction. Grey shading indicates months with school holidays. The exact dates of school holidays vary between years and schools.

Site WA92 covers the average data between 2018-21 the data collected between January–December 2022 and January–April 2023. NO2 emissions recorded in 2022 and 2023 are lower or in line with historical trends.

Site WA143 covers the average data between April 2022 and April 2023. Data recorded is consistent with expected seasonal trends.

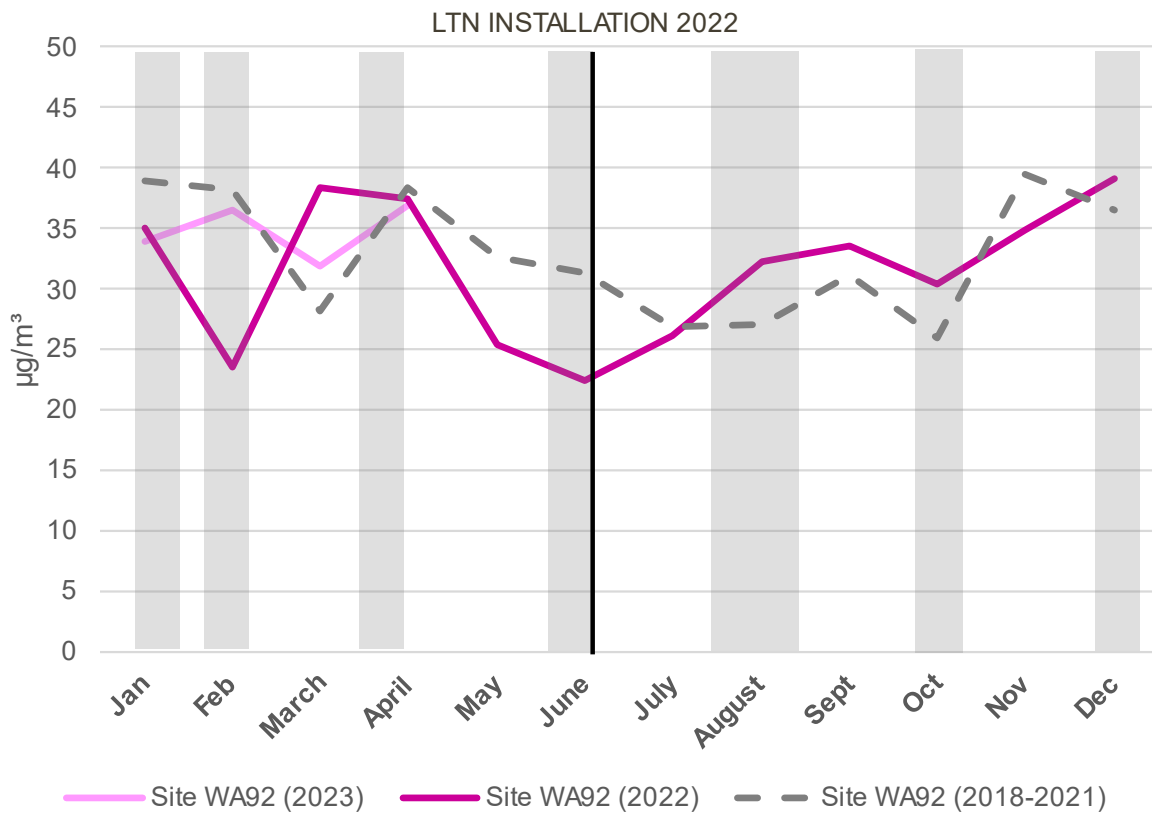


Figure 39 A50 Kingsway South (Sites WA92): Average Monthly NO2 Values

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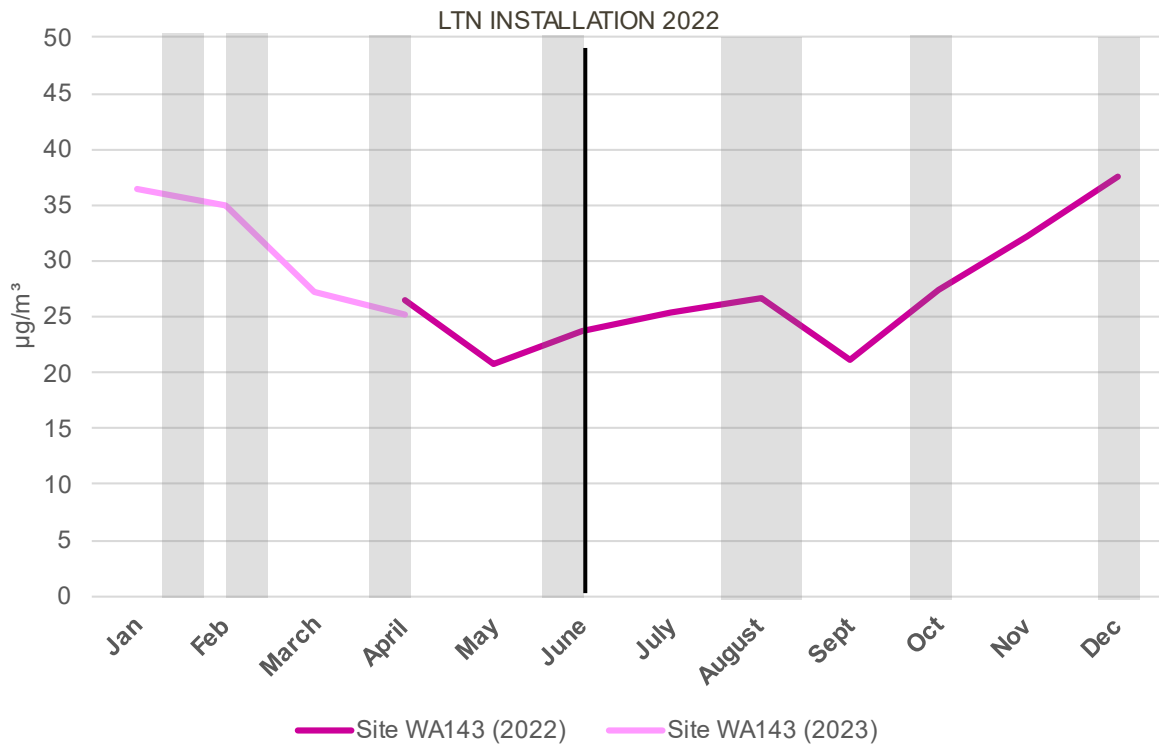


Figure 40 A50 Kingsway South (Sites WA143): Average Monthly NO2 Values

Grange Ave (Sites WA141 and WA142)

Figure 41 shows the average monthly readings for NO₂ emission on Grange Avenue – data have been collected at two locations at the north end and central section of the route. Grey shading indicates months with school holidays. The exact dates of school holidays vary between years and schools.

Site WA141 covers data between April-December 2022 and January-April 2023. Site WA142 covers data between May-December 2022 and January-April 2023. No historical readings are available for these sites as new diffusion tubes were installed on Grange Ave as part of the LTN monitoring strategy. Data recorded is consistent with expected seasonal trends.

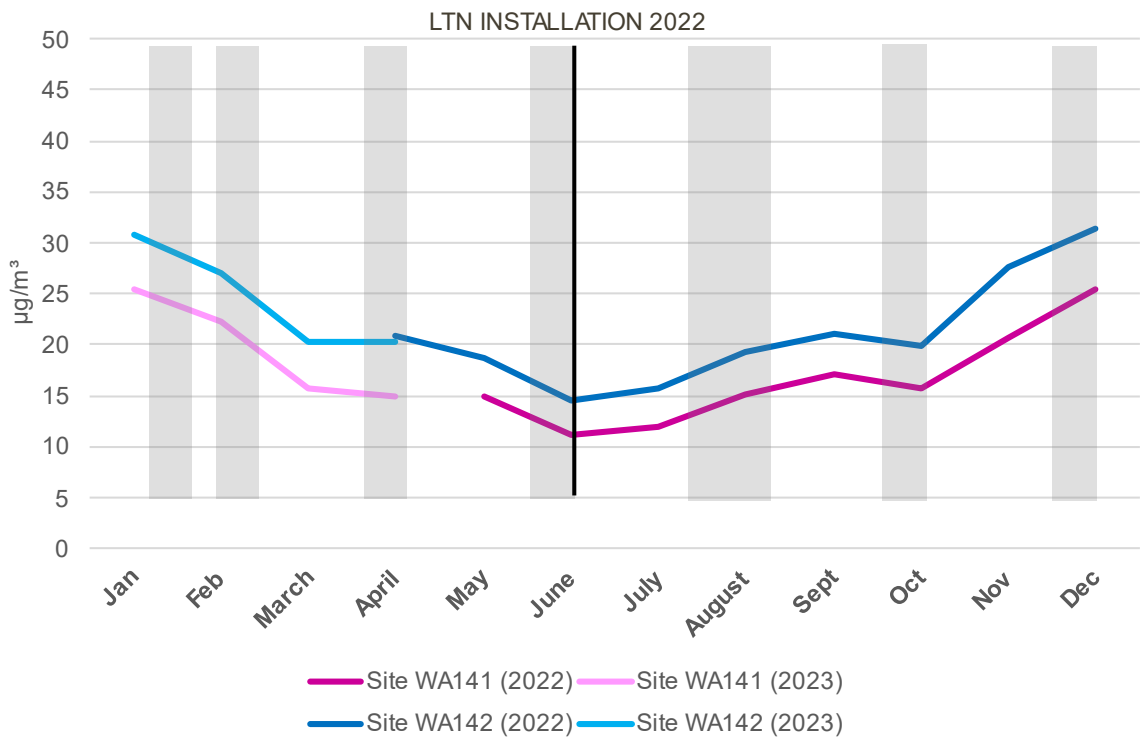


Figure 41 A50 Kingsway South (Sites WA92): Average Monthly NO₂ Values

A5061 Knutsford Road (Sites WA105 and WA115)

Figures 42 and Figure 43 show the average monthly readings for NO2 emissions on A5061 Knutsford Road. Data has been collected at two locations on the route, one on each of the eastbound (WA105) and westbound (WA115) lanes. Grey shading indicates months with school holidays. The exact dates of school holidays vary between years and schools.

Data collection at site WA115 (west) has been disrupted due to technical issues but the trends can be seen from the available data.

NO2 emissions recorded in 2022 and 2023 are lower than or in line with historical trends.

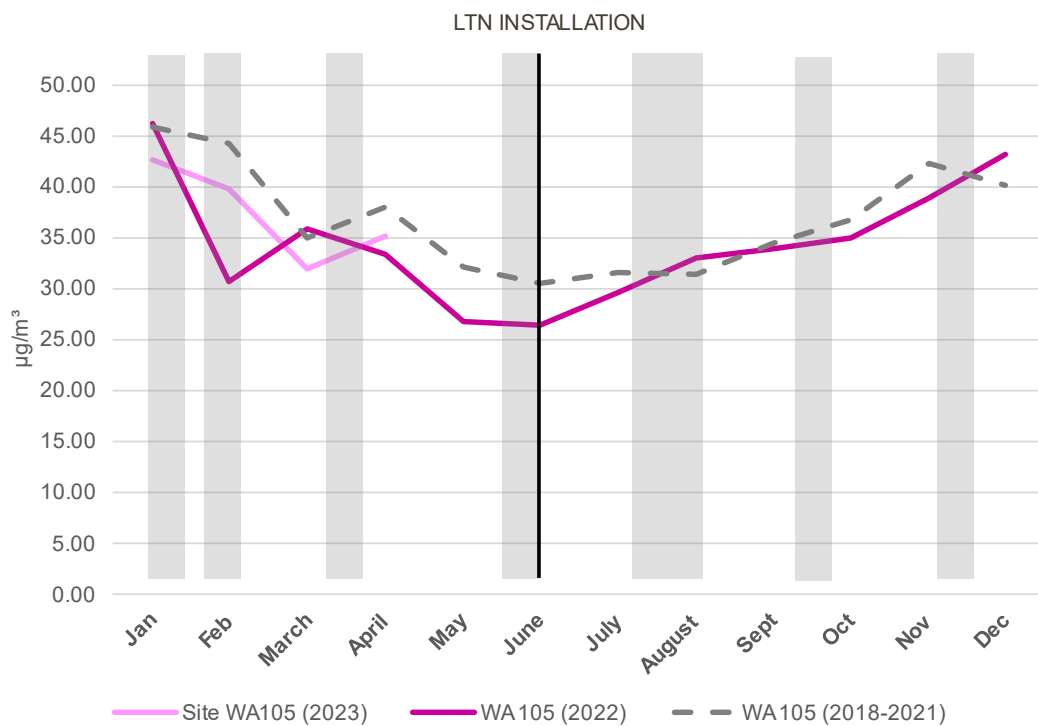


Figure 42 Latchford Village (Sites WA105): Average Monthly NO2 Values

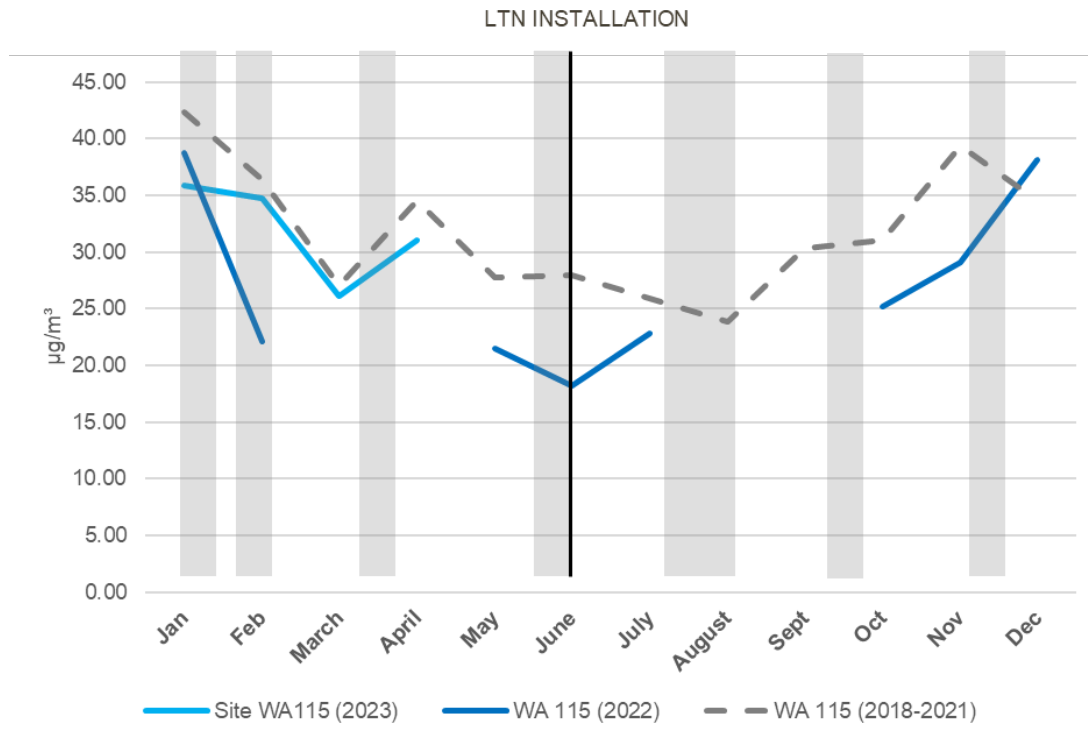


Figure 43 Latchford Village (Sites WA115): Average Monthly NO2 Values