Brighton & Hove City Council

Lewes Road Scheme

Post-Construction Monitoring Report

November 2013

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Brighton & Hove City Council

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Introduction

This report presents the findings of initial monitoring studies undertaken to determine the impact of the Lewes Road improvement scheme. The data presented was collected within 4-6 weeks of the scheme opening, and should therefore be considered as an early indication of the impacts. Changes in travel behaviour can take several years to materialise and therefore further monitoring data will be collected on an ongoing basis at approximately 6 monthly intervals. Further reports will be published as additional data is collected.

A range of baseline data was collected before works commenced, including bus and car journey times, cyclist numbers, traffic volumes (both on Lewes Road and parallel alternative routes), passenger counts, and queue lengths on side roads adjoining Lewes Road. These surveys have now been replicated following completion of the works, allowing comparisons to be made between the 'before' and after' data.

Scheme Outline and Rationale

The Lewes Road improvement scheme was implemented by the City Council between December 2012 and September 2013. The scheme involved conversion of the existing 4.5km long dual carriageway between the Vogue Gyratory and Falmer into a single carriageway for general traffic alongside a dedicated bus lane with a widened cycle lane. Changes were also made to fourteen bus stops along the route, involving the creation of 'floating bus stops' with cycle lanes passing behind to remove conflict between buses and cyclists. The signalised junction at Coombe Road and Saunders Park View was also reconfigured, and additional pedestrian and cycle crossing facilities were added at various locations along the route.

The key aims of the scheme are as follows:

- To encourage greater use of more sustainable forms of travel by creating high quality cycle facilities and enabling faster, more reliable journeys by bus through the introduction of bus priority

- To reduce the speed and volume of traffic using Lewes Road, thereby improving local air quality and reducing carbon emissions

- To reduce the severity and number of accidents taking place on Lewes Road

- To provide additional safe crossing opportunities for pedestrians and cyclists by improving existing facilities and providing additional crossings where required

The proposals were subject to a wide scale public consultation exercise where 35,000 information packs were mailed to local residents and businesses and fourteen local exhibitions were held. 63% of respondents supported the proposals and the scheme was given cross-party support to proceed by the City Council's Transport Committee.

Summary of Results

The key results to emerge from this initial monitoring exercise are as follows:

- Journey times for general traffic on Lewes Road have increased by only a small amount during the AM and PM Peak periods. Outside of the peak periods there has been no increase in journey time.

- Journey times for buses on Lewes Road have improved in both directions during the majority of time periods. The most significant improvement was recorded for southbound buses during the AM Peak period.

- The number of passengers using buses on Lewes Road has increased from 15.3 million in 2012 to 16.4 million in 2013 – an increase of 7%. The number of passengers boarding buses at bus stops in the wider Lewes Road area has increased by a similar percentage.

- Daily cyclist numbers on Lewes Road have increased from 2,085 to 2,383 following implementation of the scheme – an increase of 14%

- General traffic on Lewes Road has reduced by 13%. There is no evidence of traffic being displaced to alternative main routes or parallel residential routes

- Queue lengths on side roads joining Lewes Road have generally not increased, with the exception of Coombe Road which shows an increased queue length in the AM Peak. This requires further investigation and possible adjustment of the traffic light timings at that junction.

Main Report

Survey Dates and Specification

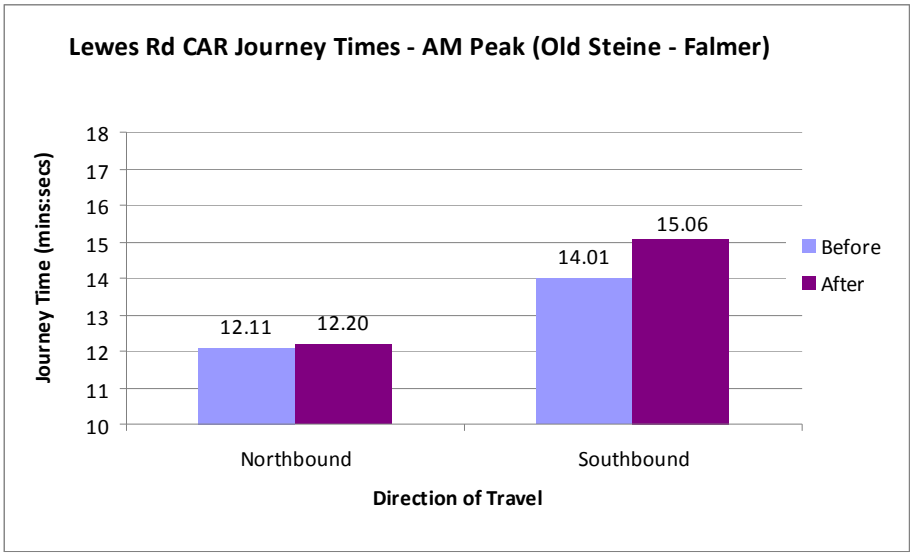
A wide range of traffic surveys were undertaken before construction of the scheme commenced in order to obtain an accurate picture of travel patterns and behaviour. These surveys were replicated after 4-6 weeks of the scheme officially opening on 30th September 2013. All surveys were undertaken by independent traffic survey companies, with the same companies and methodologies used for the before and after surveys in each case.

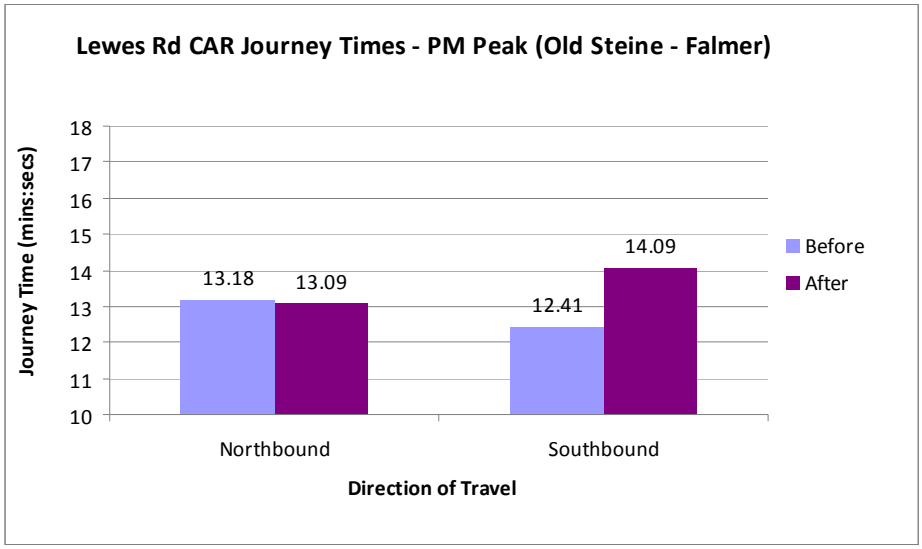
Before surveys were undertaken on a range of neutral traffic days during October and November 2012. After surveys were undertaken on a similar range of neutral days during October and November 2013. Care was taken to ensure weather conditions were similar in each case as this is known to have an effect on travel behaviour.

General Traffic Journey Times

Journey times for general traffic were measured using two separate vehicles which were repeatedly driven in both directions along Lewes Road during specified peak periods in order to obtain a worse case during the busiest times. Accurate timings were taken for the overall journey time as well as between specified checkpoints to enable more detailed analysis. A minimum of 10 runs in each direction during each time period were completed in order to obtain a representative average journey time. The AM Peak covers the time period 7am – 10am and the PM Peak 4pm – 7pm

The following graphs show a comparison of journey times for general traffic travelling on Lewes Road between Falmer and the Old Steine both before and after implementation of the Lewes Road scheme.





The results demonstrate that journey times for general traffic travelling in a northbound direction (away from the city centre) on Lewes Road have remained largely comparable to the pre-construction journey times. In the AM Peak a minor increase of 9 seconds has been recorded while in the PM Peak the average journey time has actually decreased by 9 seconds.

For vehicles travelling southbound (towards the city centre) journey times in the AM Peak have increased by an average of around one minute, whilst in the PM Peak this rises to one and a half minutes.

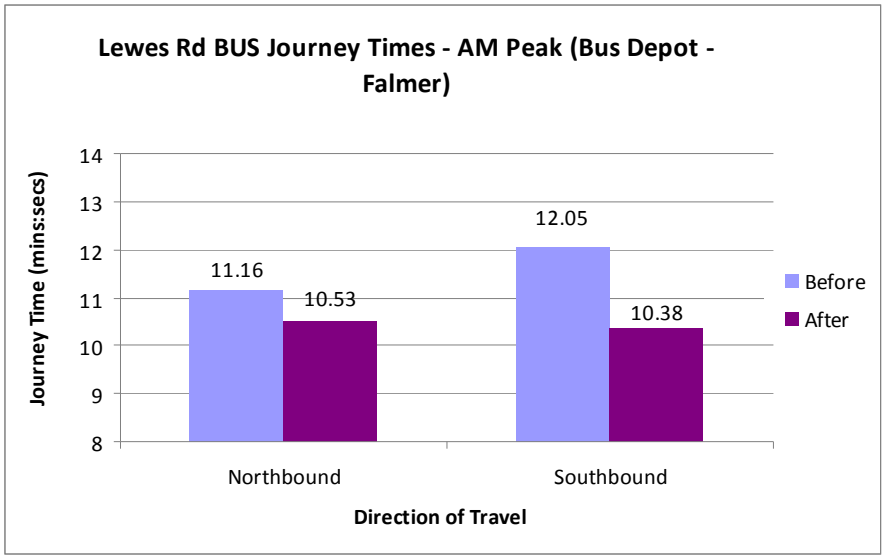
This data suggests that the Lewes Road scheme has not had a significant detrimental impact on general traffic journey times and the minor increases recorded are below that predicted by the transport model, which suggested an increase of between 3 and 5 minutes. This is particularly notable given that speed limits both north and south of the Vogue Gyratory were also reduced in the intervening period between the before and after surveys, which would be expected to have a negative impact on journey times in any event (the previous 30mph limit south of the Gyratory was reduced to 20mph and the 40mph limit north of the Gyratory reduced to 30mph).

Outside of the peak periods journey times have been largely unaffected in either direction.

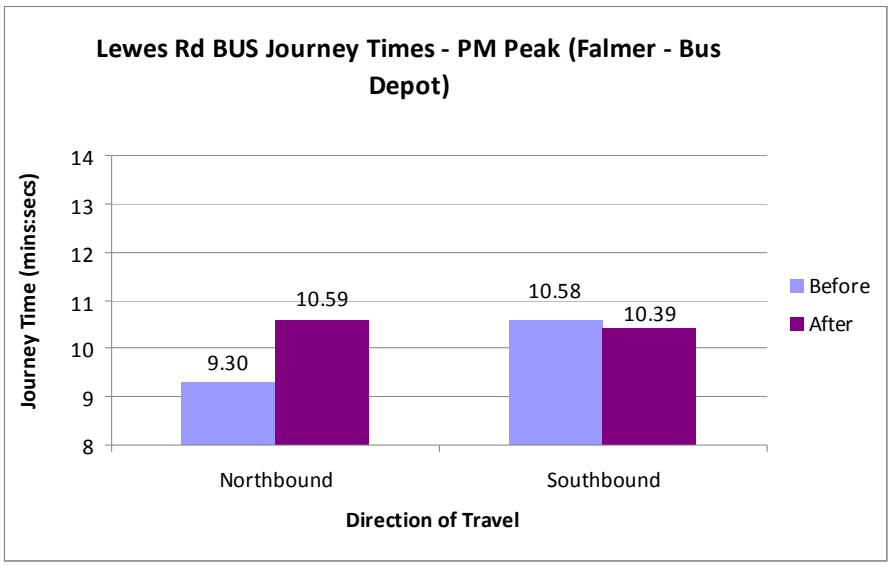
Bus Journey Times

Bus journey time data was collected both before and after construction during each of the peak periods. This data was collected by independent surveyors boarding buses and accurately timing the journey for the entire route and between each bus stop. All journey times displayed are averages with a minimum of 10 runs undertaken in each direction.

The data is presented for the section of Lewes Road from the Bus Depot (north of Vogue Gyratory) to the Sussex University campus bus stop in Falmer, i.e. the improved section. Outside of this area journey times may be affected by other factors which are not attributable to the scheme itself.



In the AM Peak period, bus journey times have improved in both the northbound and southbound directions as a result of the priority they have been afforded under the new layout. Northbound journeys have improved by an average of 23 seconds, while southbound journeys have improved by 1 minute and 27 seconds - a considerable improvement.



In the PM Peak period, bus journey times in the northbound direction appear to have worsened. In the southbound direction an improvement of 19 seconds has been recorded. The increase in journey time in the northbound direction is most

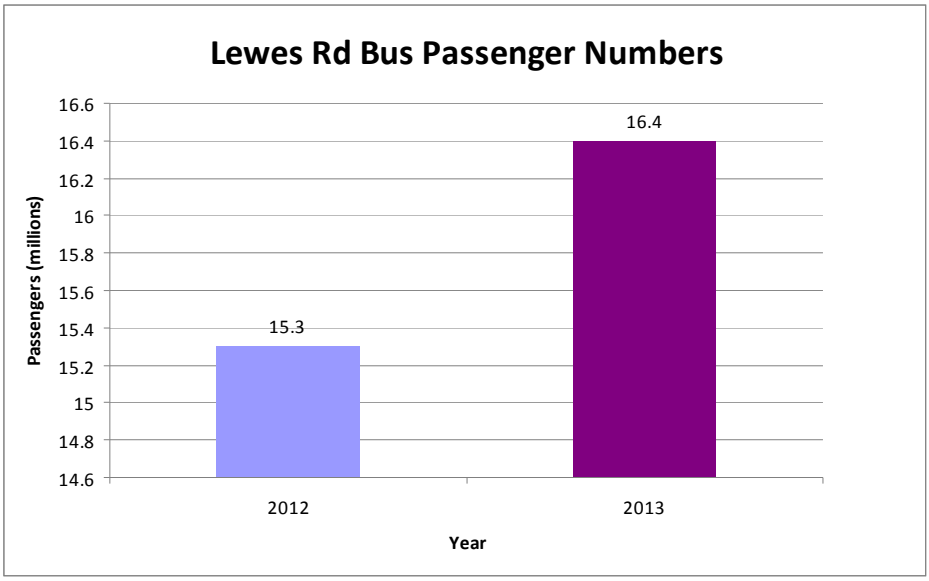
likely attributable to the reduction in speed limit mentioned previously and also the fact that more people are now boarding buses along this route which in turn increases the dwell time at each stop, especially during the peak period. Whereas in the other time periods the improvements have been sufficient to negate this and still produce an overall journey time improvement, this does not appear to be the case for northbound bus journeys in the PM peak.

In terms of bus punctuality and reliability, both the Big Lemon and Brighton & Hove Bus Company are reporting significant improvements, with buses running according to timetable at all times of the day.

Bus Passenger Numbers

Data collected by Brighton & Hove Bus Company has been used to determine trends in bus patronage for services using Lewes Road between 2012 and 2013. Figures for 2013 are projected figures based on current usage up to November 2013, and so can be considered accurate.

The following graph shows the total number of passengers carried on Brighton & Hove bus services using Lewes Road in 2012 and 2013.

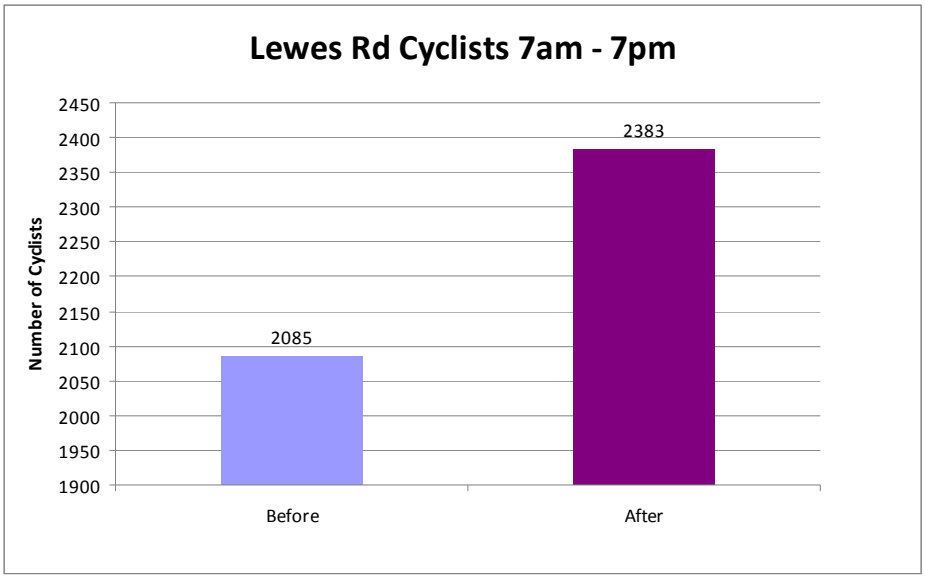


The data suggests that there has been a significant increase in the number of people travelling on buses along Lewes Road, with an additional 1.3 million passenger journeys made in 2013 compared to 2012. This represents a 7% increase and compares to a 4% increase citywide, suggesting the rate of growth in the Lewes road area is accelerating at a quicker pace than the rest of the city.

Data has also been obtained which shows the number of people boarding buses within the wider Lewes Road area. This shows a level of passenger growth consistent with the bus patronage data for Lewes Road.

Cyclist Numbers

The number of cyclists using Lewes Road before and after the introduction of the improvements has been monitored by undertaking manual counts of the number of cyclists between 7am and 7pm on a typical weekday. The survey location was just south of Saunders Park View on Lewes Road. Data presented in the graphs below represents the total two-way cyclist flow recorded during the survey period.

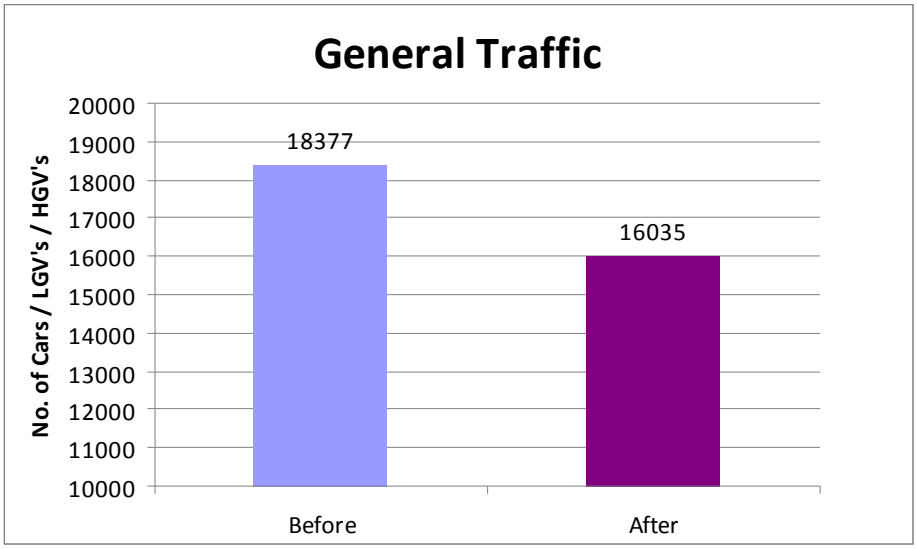


The data suggests a significant increase in the number of cyclists using the cycle lanes on Lewes Road following completion of the improvements. An additional 298 cyclists were recorded in the post-construction survey, representing an increase of 14%.

The surveys were conducted at the same time of year, ensuring the impact of cyclists travelling to and from the universities was included in each case.

General Traffic Levels

Manual counts of the number of vehicles using Lewes Road before and after construction were undertaken by a team of surveyors between 7am and 7pm on a typical weekday. The survey location was just south of Saunders Park View on Lewes Road. Data presented in the graphs below represents the total two-way traffic flow recorded during the survey period.

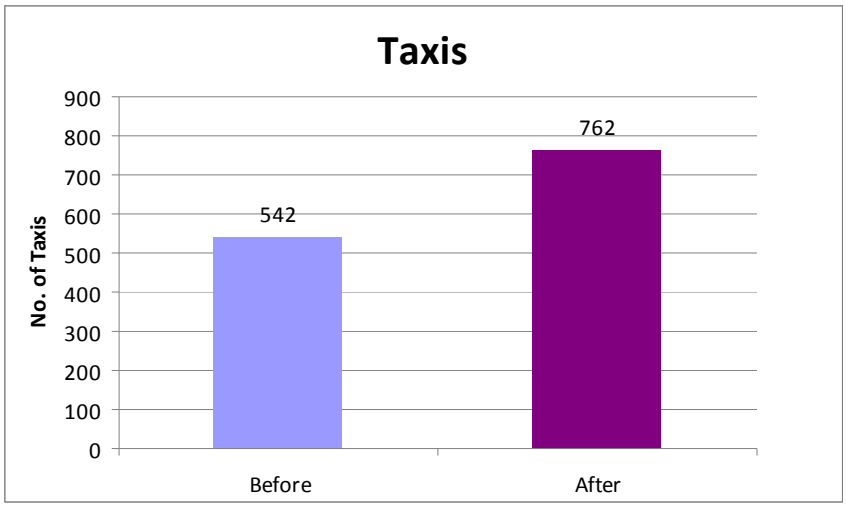


For general traffic (cars / lorries / vans), the data suggests that there are now fewer vehicles using Lewes Road compared to the situation before introduction of the scheme. Traffic levels have reduced by approximately 2,300 vehicles over the 12 hour period, representing a reduction of 13%.

The average occupancy rate of vehicles has not changed significantly as a result of the scheme, with the average number of people per car being 1.38 in the before surveys and 1.33 in the after surveys.

Taxi Numbers

Manual counts of the number of taxis using Lewes Road were undertaken at the same time and location as the cyclist and general traffic counts outlined previously.



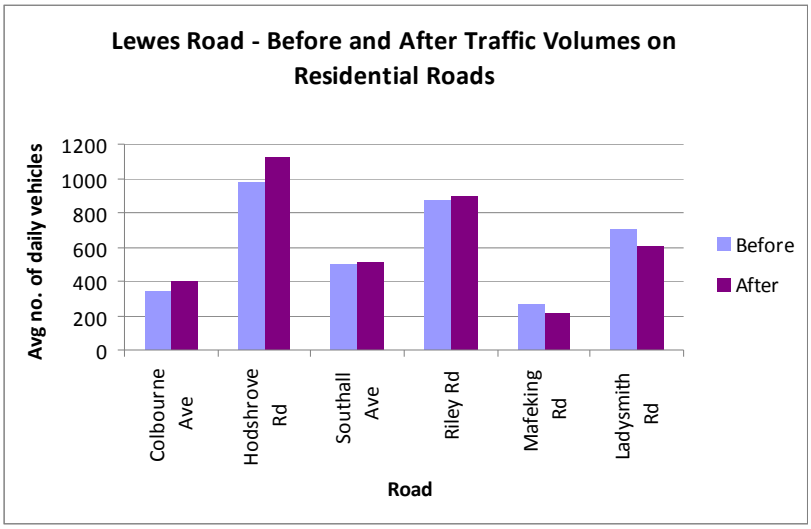
The data suggests a significant increase in the number of taxis travelling on Lewes Road during the survey period, indicating that the changes have been of benefit to both taxi drivers and passengers since they are now afforded priority over general traffic and therefore can expect quicker and more reliable journey times.

Diverted Traffic

The volume of traffic using Lewes Road on a typical weekday has reduced by approximately 13% following the introduction of the scheme. One of the main aims of the scheme is to make sustainable forms of transport more attractive and therefore encourage modal shift from cars to buses and cycling, where this would be a practical option for those concerned. Data outlined previously in this report suggests that use of these forms of transport has increased considerably, but a further possible response to the changes on Lewes Road would be for some drivers to travel via a different route.

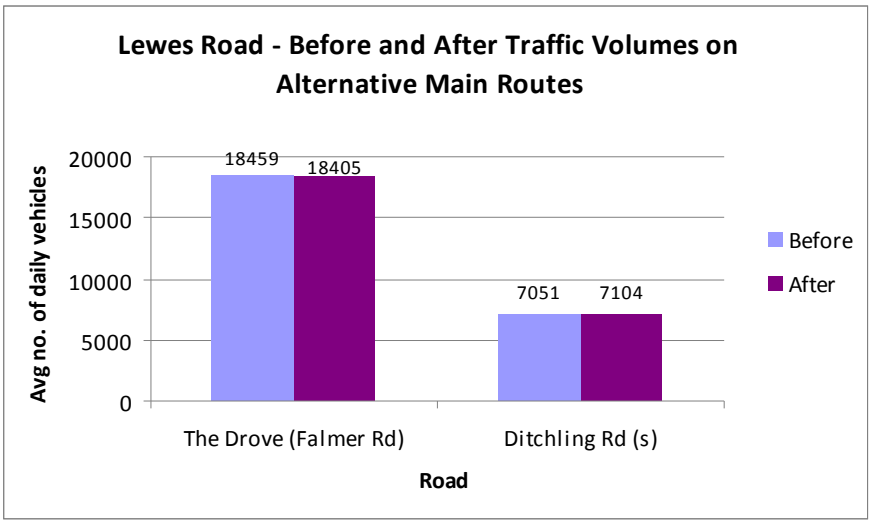
In order to monitor the impact of this, 7-day traffic counts were undertaken before construction on a range of residential roads that could be considered possible 'rat runs', as well as on Falmer Road and Ditchling Road which could be used as alternative main routes in and out of the city. These surveys have been replicated in the same locations following completion of the scheme to determine whether or not an increase in traffic has occurred on these routes.

The data presented in the graphs below is the average 24hr daily two-way traffic flow for each road.



The survey results suggest that there has not been a significant increase in rat-running in residential roads since the scheme came into operation. Average daily traffic flows in those roads surveyed were very similar in the before and after surveys.

Transport modelling undertaken during the planning stages suggested that some traffic coming in and out of the city may use alternative main routes instead of Lewes Road in response to the reduction in capacity. Ditchling Road and Falmer Road were identified as the two most likely alternative routes that could be used for this purpose.



The survey results suggest there has been no appreciable increase in traffic using Falmer Road or Ditchling Road as a result of the Lewes Road scheme. In the case of Falmer Road, a reduction of around 50 vehicles on average per day has been recorded since the Lewes Road scheme was completed.

Given the fact that journey times for general traffic using Lewes Road have not significantly increased, one would not expect to see traffic increases on these alternative routes as diverting away from Lewes Road would be unlikely to result in any time saving.

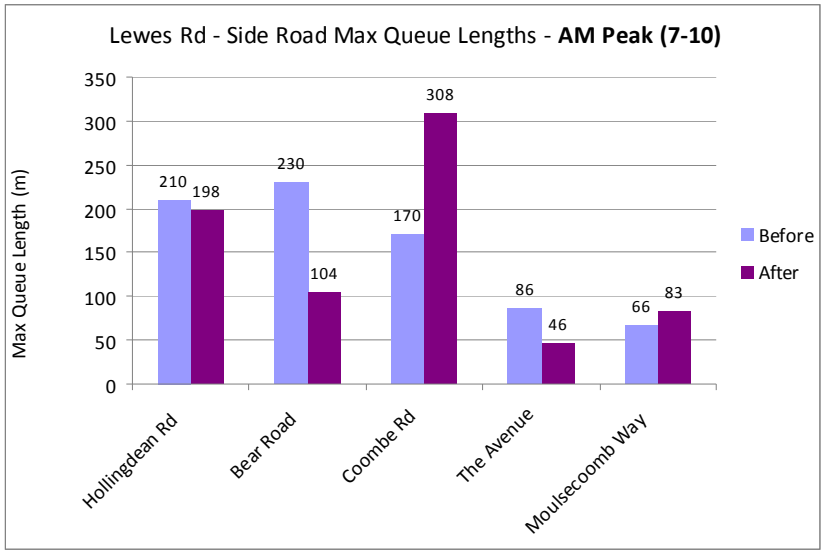
Queue Lengths

Queue lengths on side roads adjoining Lewes Road provide an indication of whether the number of people trying to exit onto Lewes Road has increased (i.e. because of rat running) and also a longer queue would suggest that drivers are finding it more difficult to access Lewes Road following the changes.

Queue lengths on the following roads have been measured both before and after construction in both the AM (7-10) and PM (4-7) peak periods:

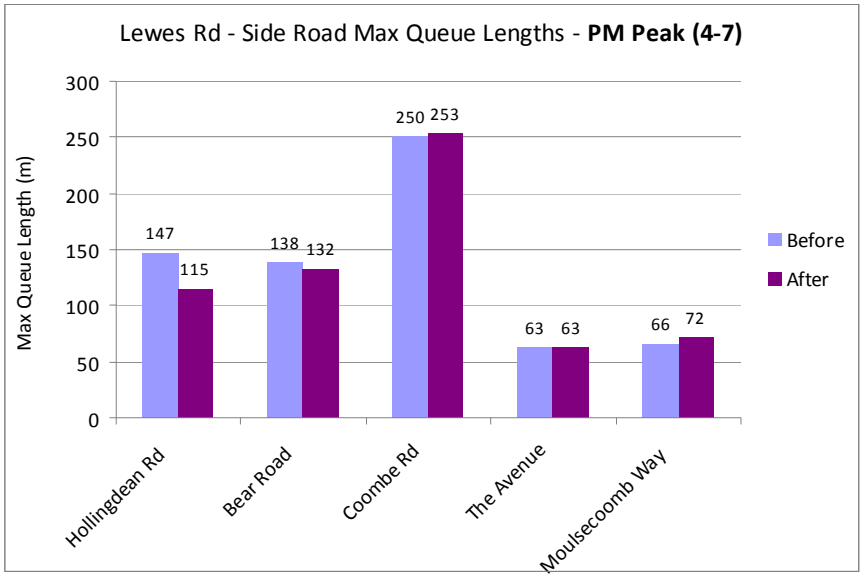
- Hollingdean Road
- Bear Road
- Coombe Road
- The Avenue
- Moulsecoomb Way

Queue lengths were collected manually by independent surveyors on site. Data is presented in the graphs below in metres.



During the AM Peak period, it is clear that in the majority of cases there has been no increase in queue lengths on side roads joining Lewes Road. Indeed in some cases the maximum queue length has reduced. This suggests that the introduction of the bus lane has not resulted in additional difficulties for people turning on to Lewes Road. A particular area of concern for some local residents is the turning from The Avenue into Lewes Road but the data for this area shows a reduced maximum queue length, suggesting this movement may now be easier to undertake than under the previous dual carriageway configuration.

The one exception is Coombe Road where the data shows a significant increase in the queue length for vehicles exiting onto Lewes Road. Further investigation is required to determine exactly why this is occurring and it may require additional timing changes at the Coombe Road signalised junction.



In the PM Peak, queue lengths have not increased for any of the side roads, suggesting the increase at the Coombe Road junction is confined to the AM Peak period only.

Conclusions

Although the scheme has only been in place for a short period, the results of this initial monitoring exercise appear very positive with a number of desirable outcomes already evident. Key outcomes include improved bus journey times, increases in the number of cyclists and bus passengers, and a reduction in general traffic levels with no evidence of displacement to alternative routes.

Negative impacts on journey times for general traffic have been minimised, with only minor increases recorded during some peak periods, and journey times outside of peak periods being unaffected.

It is anticipated that further increases in the use of sustainable forms of transport along the corridor will be recorded as additional data is collected after a further 6 months of operation.

Further assessment of the queue lengths on Coombe Road during the AM Peak period will be undertaken to better understand the reasons for the increases recorded. If necessary, adjustments to the timing of the traffic lights will be undertaken to return the queue length to that recorded in the pre-construction surveys.