Lewes Road

Interim Post-Construction Monitoring Report

Brighton & Hove City Council

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Brighton & Hove City Council

Contents

1. Introduction

It is now a year since the completion of the Lewes Road scheme. Phase 1, Lewes Road Corridor, north of the Vogue Gyratory was finished in 2013, while Phase 2, the Gyratory was completed in December 2014.This interim report presents the findings of the second stage of monitoring studies undertaken to determine the impact of the Lewes Road improvement scheme. The latest data were collected in October/ November 2015 and are presented alongside data collected and reported on in October/ November 2013.

A range of baseline data were 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, allowing some comparisons to be made between the 'before' data and data collected immediately after the completion of Phase 1 (north of the Vogue Gyratory) and two years after.

1.1 Scheme Outline and Rationale

Phase 1, the Lewes Road improvement scheme was implemented 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. Additionally, the signalised junction at Coombe Road and Saunders Park View was reconfigured and additional pedestrian and cycle crossing facilities were added at various locations along the route.

Phase 2, the Vogue Gyratory was implemented between July 2014 and December 2014. This included upgrading all the traffic signal equipment, introducing a northbound two metre wide cycle lane with a floating bus stop and improving pedestrian facilities.

The key aims of the overall scheme were 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 Council's Transport Committee.

1.2 National Context

Department for Transport (DfT) traffic data indicates that there has been an increase in motor vehicle traffic from 2012. Indeed, nationally traffic levels are now (as of summer 2015) 0.1% than the highest level (the year ending September 2007) recorded before the recession which was associated with a fall in traffic. The pattern of increase is repeated across all road types[1].

1.3 Summary of Results

The key results to emerge from the latest monitoring exercise are as follows:

- The number of passengers boarding buses at bus stops in the wider Lewes Road area has increased from 6.2 million to 6.8 million. This is an increase of 9% since before the scheme was implemented.

- General traffic on Lewes Road has reduced by 15%.

- There is evidence that growth in cycling has been sustained with data from permanent cycle counters recording an average increase of 13% for the first five months of 2015 (January to May) compared to 2009-2011 levels.

- Side roads have generally not experienced substantial changes in queue lengths and previous increases seen on Coombe Road have been addressed. Hollingdean Road has seen an increase in queue lengths and will continue to be monitored.

- Journey times for general traffic on Lewes Road have seen limited change with any recorded increases during peak periods limited to less than one minute. This is within the anticipated range predicted by the traffic modelling at the design stage.

[1]Reference: DfT (2015) Quarterly Road Traffic Estimates April- June 2015 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/452396/road-traffic-estimates-quarter-2-2015.pdf

- The innovative ‘floating’ bus stops have been successful with very high user satisfaction levels with regards to both ease of use and safety.

- Limited change has been observed in the number of road traffic accident casualties and air quality. Both will continue to be monitored in order to assess the impacts of the scheme, including the more recent Vogue Gyratory improvements, over the longer term.

2. Survey Dates and Specification

A wide range of traffic surveys were undertaken before the construction of the scheme commenced in order to obtain an accurate picture of travel patterns and behaviour. In October 2013, these surveys were repeated and a monitoring report was published in November 2013 explaining the impact of the scheme immediately following completion.

Owing to the Vogue Gyratory construction works, no monitoring was undertaken in autumn 2014; however, a further stage of monitoring has been undertaken in October and November 2015. This report summarises the outcome of the latest monitoring and compares it to both the baseline (before scheme) and October 2013 data.

All surveys were undertaken by independent traffic survey companies, with the same methodologies used for the before and both sets of after surveys.

All surveys were undertaken on a range of ‘neutral’ traffic days (e.g. not during school holidays).

3. Journey Times

3.1 General Traffic

Journey times for general traffic were measured using 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. A number of journeys were undertaken in each direction in order to obtain a representative average journey time. The AM peak covers the time period 7am – 10am and the PM peak 4pm – 7pm.

Figures 3.1 and 3.2 show AM and PM peak comparisons respectively of general traffic journey times between Falmer and St Peter’s Church before and after the implementation of the Lewes Road scheme.

The latest data for both the AM peak period shows a marginal increase in traffic journey times in both directions compared to data from before the scheme was built. However, the average increase is less than one minute with maximum increases of 28 seconds northbound and 19 seconds

southbound. Journey times for the PM peak show a similar pattern though the latest surveys indicate a slightly greater increase of 58 seconds northbound.

Figure 3.1: Lewes Road CAR Journey Times - AM Peak (St Peter's Church to Stony Mere Way)

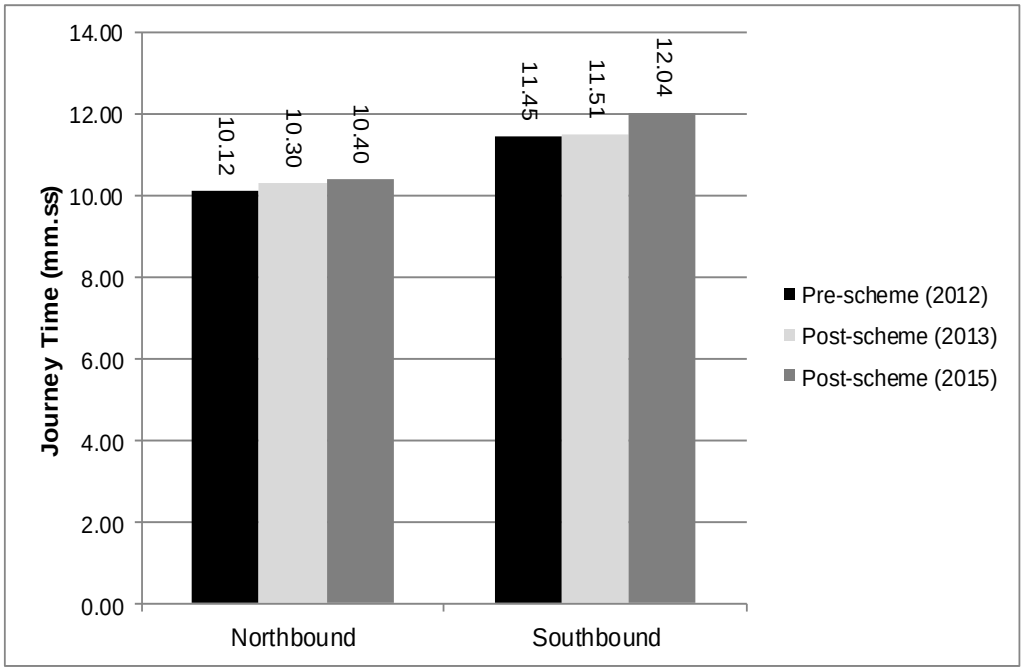
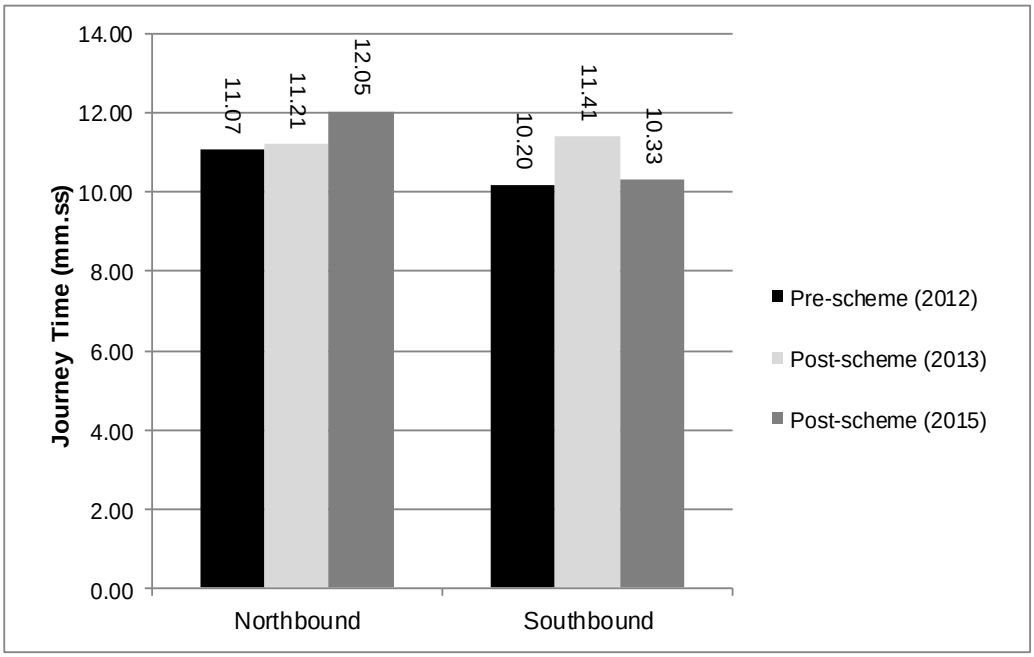


Figure 3.2: Lewes Road CAR Journey Times - PM Peak (St Peter's Church to Stony Mere Way)



Overall the data suggest that the Lewes Road scheme has not had a significant detrimental impact on general traffic journey times. In addition, the increases in journey times experienced in the PM Peak are below those 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 an effect 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).

3.2 Bus Journey Times

Bus journey time data was again collected during each of the peak periods. This data was collected by independent surveyors boarding buses to accurately timing the journey for the entire route and between each bus stop. All journey times displayed are averages of journeys undertaken. In order to provide a fair comparison, the 25X express service operated by Brighton & Hove Buses and introduced since the completion of the Lewes Road scheme has been excluded.

In the previous monitoring report in November 2013, data were presented for the section of Lewes Road between the bus depot (north of Vogue Gyratory) and the University of Sussex campus bus stop in Falmer, i.e. the improved section. However, now that the works at the Vogue Gyratory are completed, the analysis below covers the section from the Melbourne Street bus stop (south of the Vogue Gyratory) north. This therefore includes the improved Sainsbury's northbound bus stop where a greater number of services are now able to stop. Whilst providing improved access to public transport this would also have the effect of increasing journey times.

Figure 3.3 Lewes Road BUS Journey Times - AM Peak (Melbourne Street- Falmer)

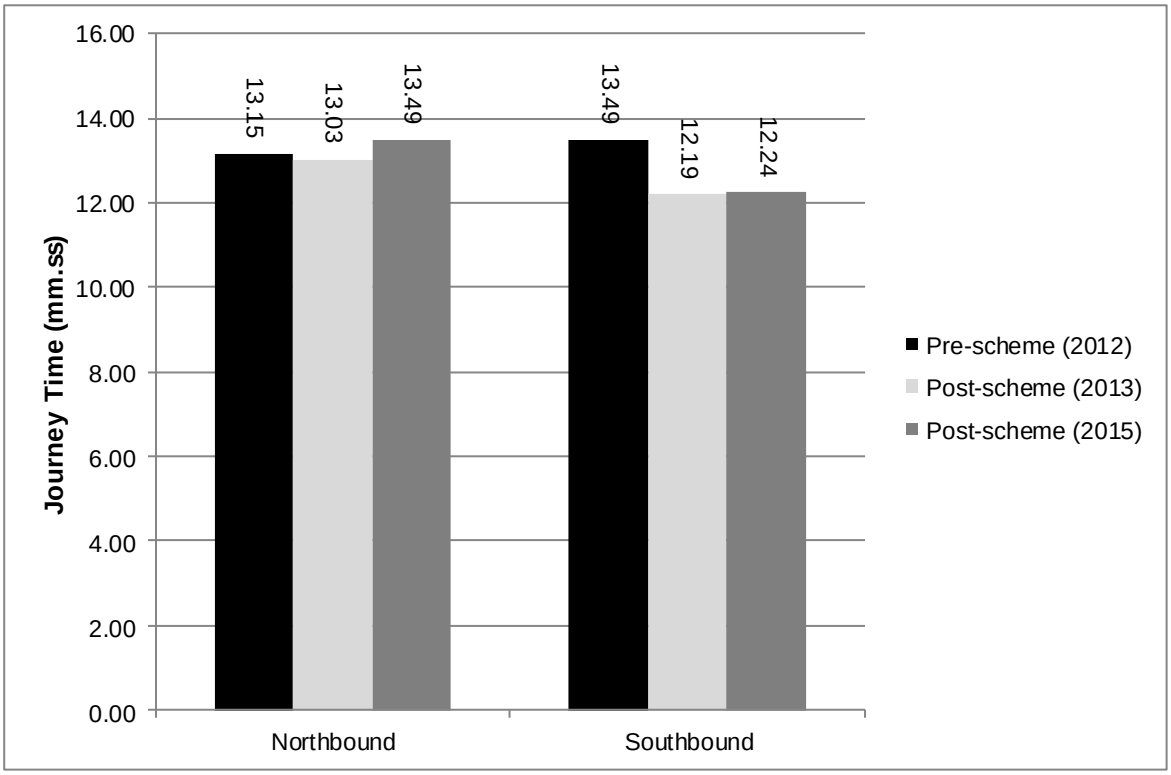


Figure 3.4 Lewes Road BUS Journey Times - PM Peak (Melbourne Street- Falmer)

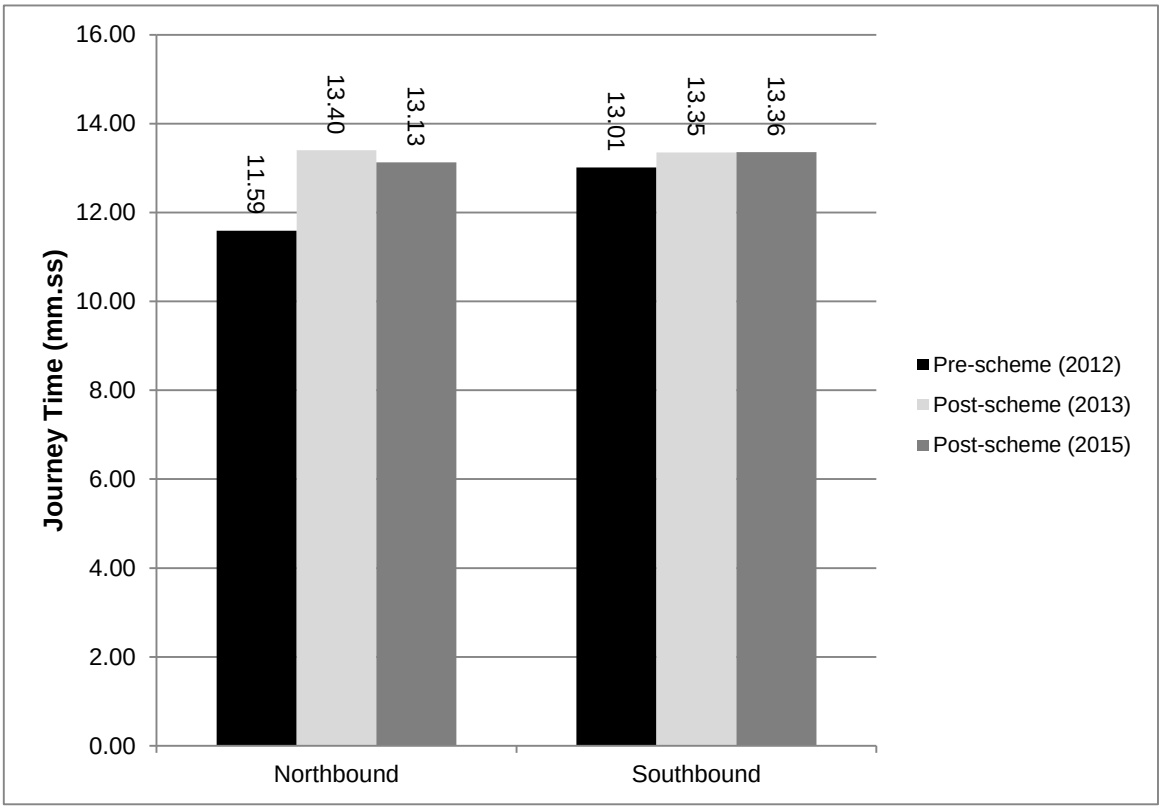


Figure 3.3 indicates that from 2012 levels in the AM peak there has been an increase in journey times of an average 34 seconds northbound. Southbound there has been a decrease of an average 85 seconds. In the PM peak (Figure 3.4), the data indicate that bus journey times have increased by an average 74 seconds northbound and 35 seconds southbound.

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.

Crucially, bus punctuality and reliability improvements have been reported by bus operators with buses more consistently running to their allotted time on Lewes Road. The scheme has also assisted Brighton & Hove Buses in introducing the 25X express service which provides quicker journeys for many bus passengers using Lewes Road.

4. Traffic and Passenger Volumes

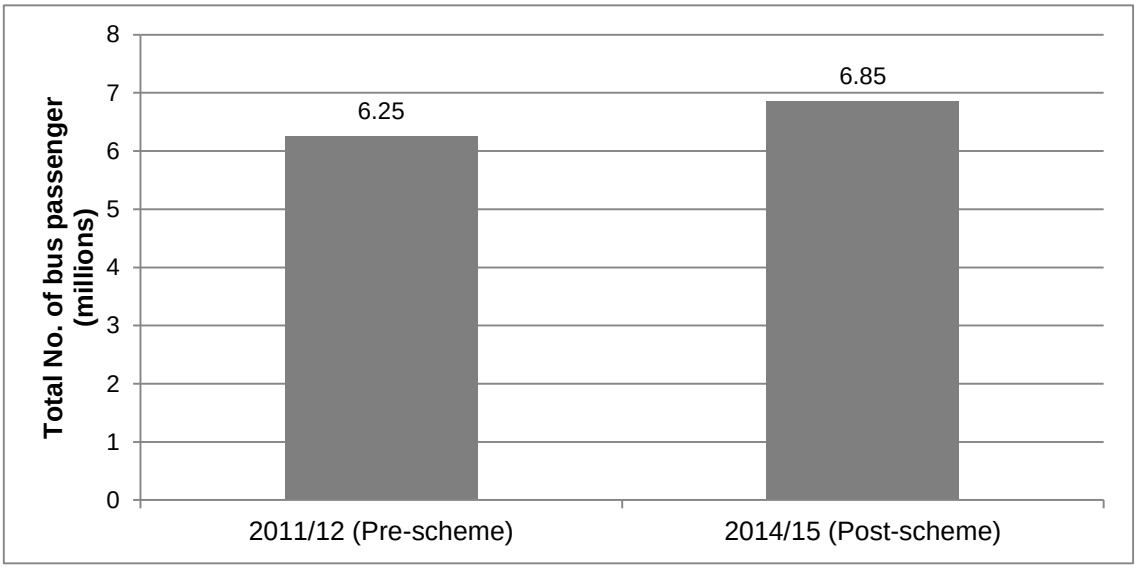
4.1 Bus Passenger Numbers

Data provided by Brighton & Hove Bus Company has been used to determine trends in bus patronage for services using Lewes Road between 2012 and 2015.

Figure 4.1 shows the total number of passengers boarding Brighton & Hove bus services on Lewes Road and the surrounding residential areas in 2011/12 (pre-scheme) and 2014/15 (post-scheme).

The data suggest that there has been a sizeable increase in the number of people accessing buses along Lewes Road and from within the surrounding residential areas. This increase represents an additional 591,000 journeys per year originating from the Lewes Road area since before the scheme was implemented, which is an increase of 9%.

Figure 4.1: Total Number of Bus Passengers Boarding within the Lewes Road Area



Source: Brighton & Hove Bus Company

Data on the approximate number of passengers on bus routes serving Lewes Road, also provided by Brighton & Hove Buses, indicates that there was a continued increase in the years after the scheme was introduced but that a fall was recorded in 2014/15 with passenger numbers similar to 2011/12 at 15.1 million. This should however be viewed in the context of wider falls in bus patronage across the city during 2014/15. Early indications for 2015/16 are that the reductions seen are not part of a long term trend; however, the situation will continue to be monitored.

4.2 Cyclist Numbers

Data from Automatic Cycle Counters permanently located between Coombe Road and Natal Road indicate that there has been an overall increase since the scheme was introduced. Figures for the first five months of 2015 (January-May) show an average 12.7% increase compared to figures for 2008-2011. This will continue to be monitored to determine if this increase is a longer term trend.

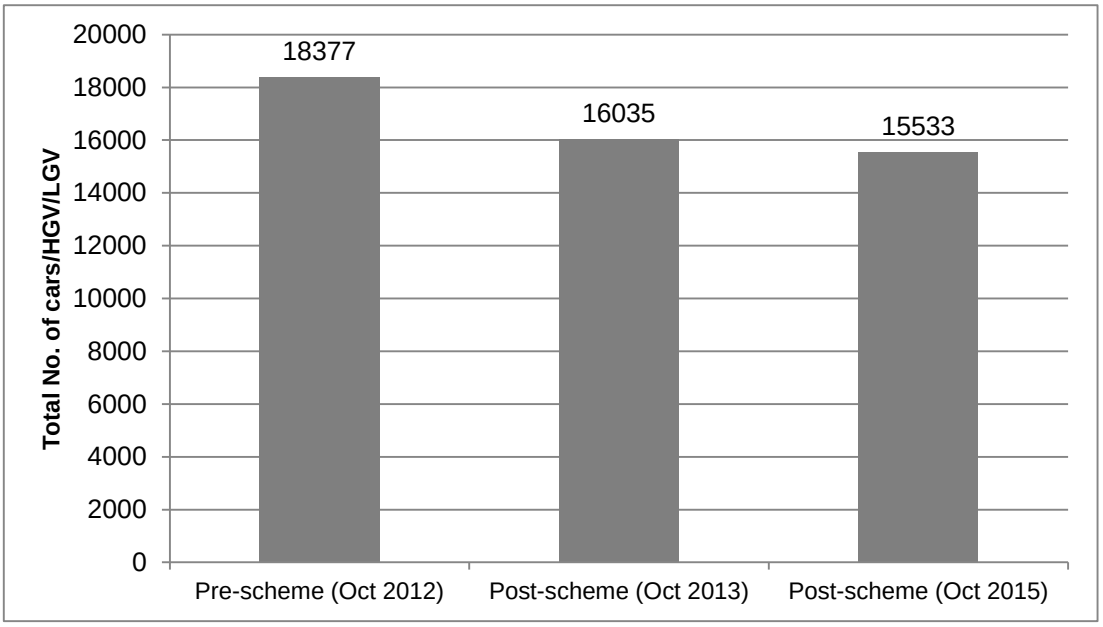
4.3 General Traffic Levels

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 represent the total two-way traffic flow recorded during the survey period.

For general traffic (cars / lorries / vans) (Figure 4.2), the data suggest that there is downward trend in the number of vehicles using Lewes Road compared to the situation before the introduction of the scheme. The 2015 survey indicates a reduction of approximately 2,850 vehicles over the 12 hour period, representing a reduction of 15%.

The average occupancy rate of vehicles has seen a marginal adjustment, with the average number of people per car being 1.4 in the before surveys and 1.3 in the after surveys.

Figure 4.2: Weekday (7am-7pm) Traffic Volumes



4.4 Taxis

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.

Overall the data suggests that the number of taxis using Lewes Road has increased by approximately 36% since the scheme commenced. This indicates 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.

4.5 Diverted Traffic

The above data suggests that the volume of general traffic using Lewes Road on a typical weekday has reduced by approximately 15% following the introduction of the scheme. Whilst encouraging transfer to other modes of transport was an objective of the project, it is possible that a further 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, seven day traffic counts were undertaken before construction on a range of residential roads, 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 the completion of the scheme in October 2013 and again in October 2015 to determine whether or not an increase in traffic has occurred on these routes.

The data summarised in Table 4.1 indicate the difference in average hourly traffic flows across a seven day 12 hour (7am-7pm) period.

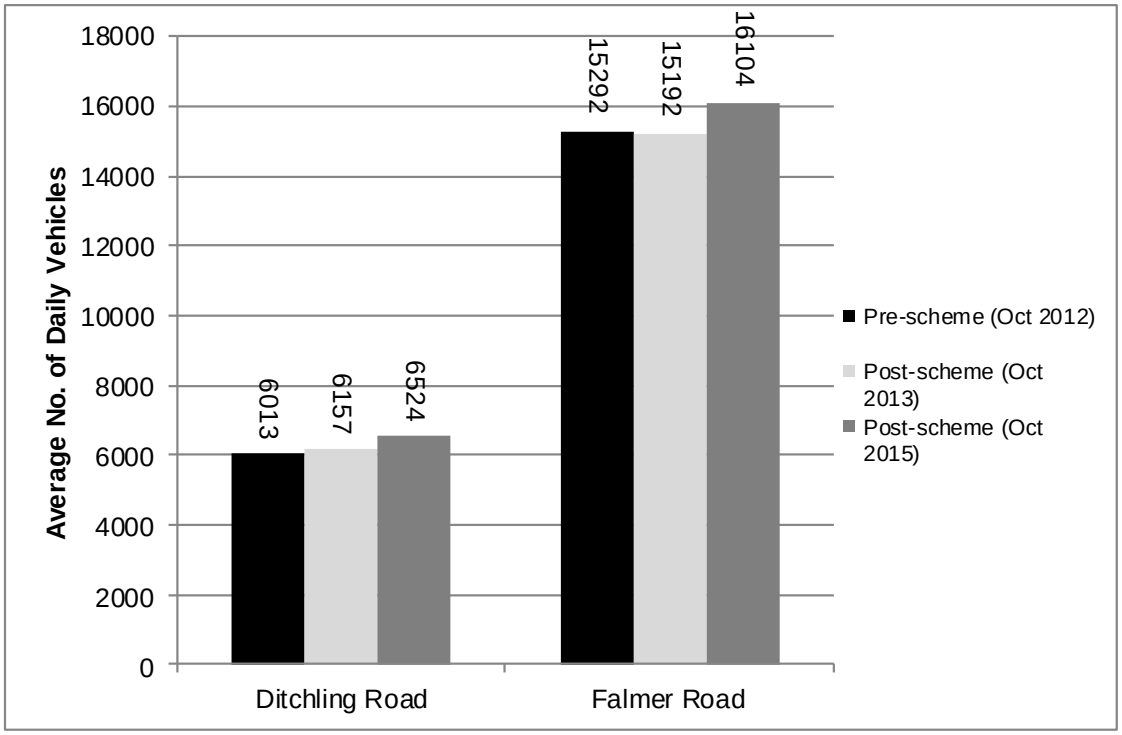
Table 4.1: Change in Traffic on Surrounding Streets

Street	Change in average hourly traffic (Mon-Sun 7am-7pm) (all directions)
Ladysmith Road	-4
Southall Avenue	23
Colbourne Avenue	15
Hodshrove Road	17
Riley Road	15
Mafeking Road	0

The survey results suggest that there have been small increases in a number of streets. However, since most of the additional cars are travelling at peak times, it is likely that a small increase will be more noticeable to residents living on these roads.

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. Surveys were therefore undertaken on Ditchling Road north of Woodbourne Avenue and Falmer Road south of Village Way.

Figure 4.3: Before and After Traffic Counts on Alternative Routes (7 Day 12 hour average)



The survey results (Figure 4.3) suggest there have been increases in traffic flow on Ditchling Road and Falmer Road. Although it is possible that some traffic may have diverted from Lewes Road, the fact that journey times have seen a negligible increase as a result of the scheme would suggest that the use of an alternative route is unlikely to result in any journey time saving.

4.6 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.

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

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

Queue lengths were collected manually by independent surveyors with the maximum recorded queue lengths summarised in Figures 4.4 and 4.5.

Figure 4.4: Maximum Queue Length on Side Roads - AM Peak 7 - 10am

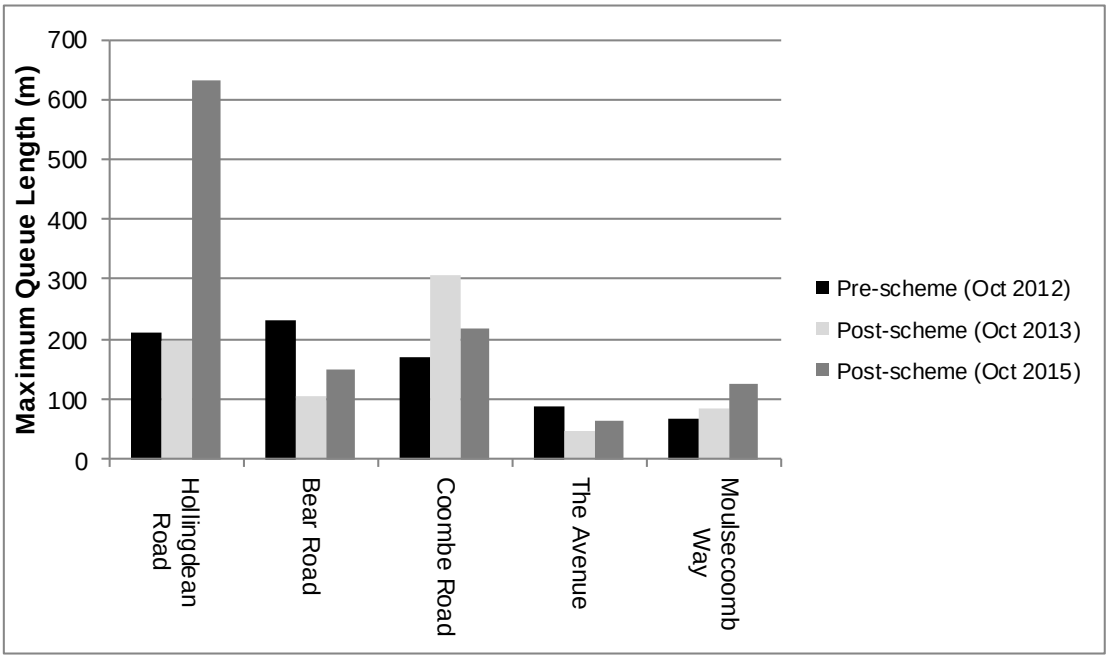
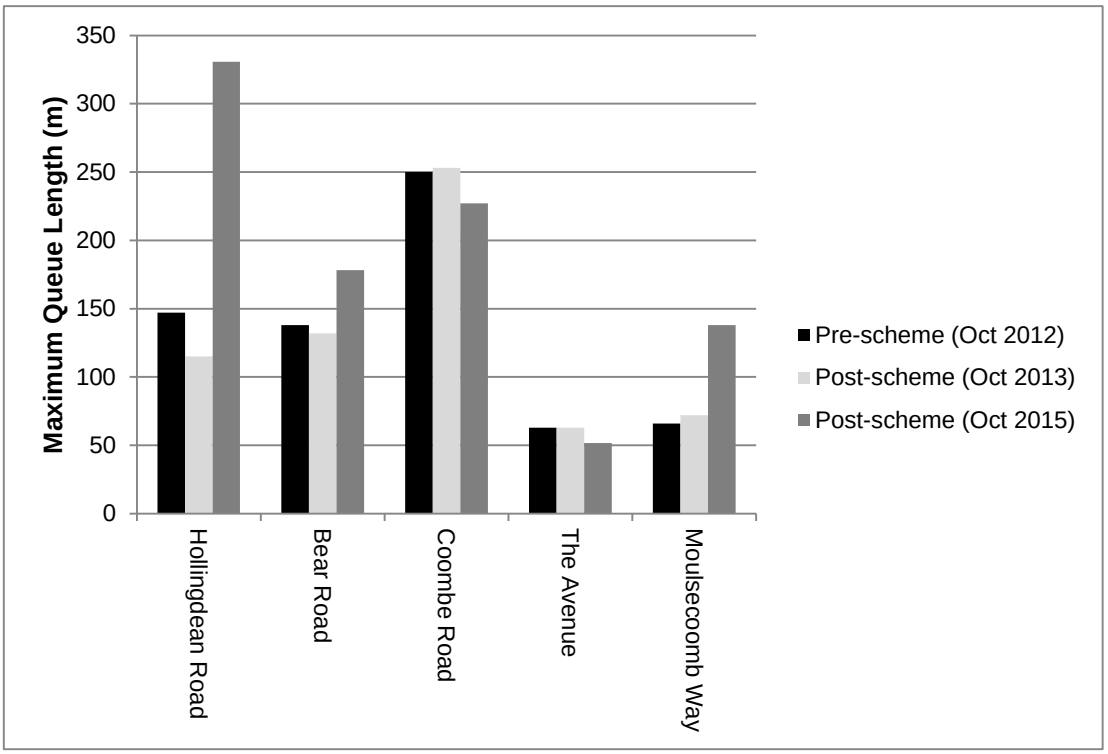


Figure 4.5: Maximum Queue Lengths on Side Roads - PM Peak 4 - 7pm



The initial monitoring identified Coombe Road as having increased queue lengths since the completion of the scheme. To address this, an additional left turn lane was provided at this junction which has effectively doubled capacity. This has resulted in substantially reduced queue lengths compared to 2013.

Some other streets have seen marginal increases in average queue lengths during peak periods. These increases can generally be considered negligible

with the exception of Hollingdean Road. During the redesign of the Vogue Gyratory, the capacity of the Hollingdean Road approach was increased with the introduction of an additional lane between the junction with Hughes Road and Lewes Road. However, it is possible that the increase in traffic is a result of traffic diverting from Upper Lewes Road to Hollingdean Road following its closure during the Vogue Gyratory works and subsequent changes to Upper Lewes Road itself. The situation will continue to be monitored.

5. Air Quality

Assessment of air quality is provided by a monitoring station located south of the Vogue Gyratory. This indicates that nitrogen dioxide concentrations remained at approximately 50 µg/m^3 (micrograms per cubic metre) between 2012 and 2014. This exceeds the legal limit of 40 µg/m^3, with this part of Lewes Road being within the city's Air Quality Management Area across which there is a similar issue.

The data suggests that the scheme has not resulted in a noticeable change in air quality in this location. Factors which may reduce any impact from the scheme and the lower general traffic flows recorded are the 'street canyon' effect (where buildings more tightly bound the street reducing opportunities for pollutants to dissipate) and traffic conditions south of the Vogue Gyratory. Levels north of Natal Road are however within acceptable levels. Air quality on Lewes Road will continued to be monitored in order to ascertain any longer term impacts following completion of the Vogue Gyratory works in December 2014.

Further information about air quality management in the city can be found on the council's website: http://www.brighton-hove.gov.uk/content/environment/air-quality-and-pollution/air-quality-management-city

6. Floating Bus Stops- User Perceptions

The Lewes Road scheme incorporated innovative 'floating bus stops' or bus stop bypasses which allow cyclists to travel around the bus stop and avoid conflict with buses leaving the bus stop. The design is also intended to make cyclists feel safer and encourage greater travel on bicycle by those who may be less experienced or confident travelling this way.

In order to assess satisfaction, user surveys were undertaken by independent surveyors of bus users, pedestrians and cyclists. These took place at a number of locations along Lewes Road. In total, 204 responses were received, of which 195 people were aware of the floating bus stops. It can be seen from the graphs provided below that the vast majority of pedestrians, cyclists and bus users find the bus stops both easy and safe to use. This supports the recorded collision data which indicates that there have been no accidents in the vicinity of the bus stops.

For all road user categories at least 85% said that the bus stops were ‘very easy’ or ‘easy’ to use (Figure 6.1) and at least 84% said that they were ‘very safe’ or ‘safe’ (Figure 6.2). The proportion of bus users and cyclists giving this response were slightly higher but it can be seen that the high satisfaction levels are consistent amongst all users surveyed.

Figure 6.1: Response to ‘How easy are the floating bus stops to use?’

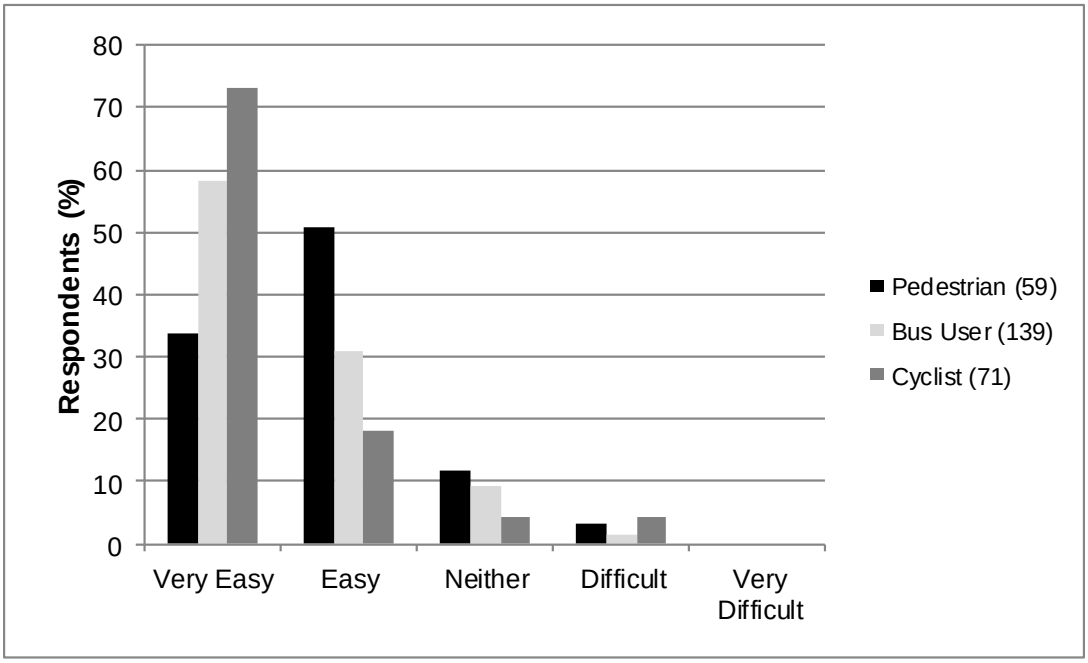
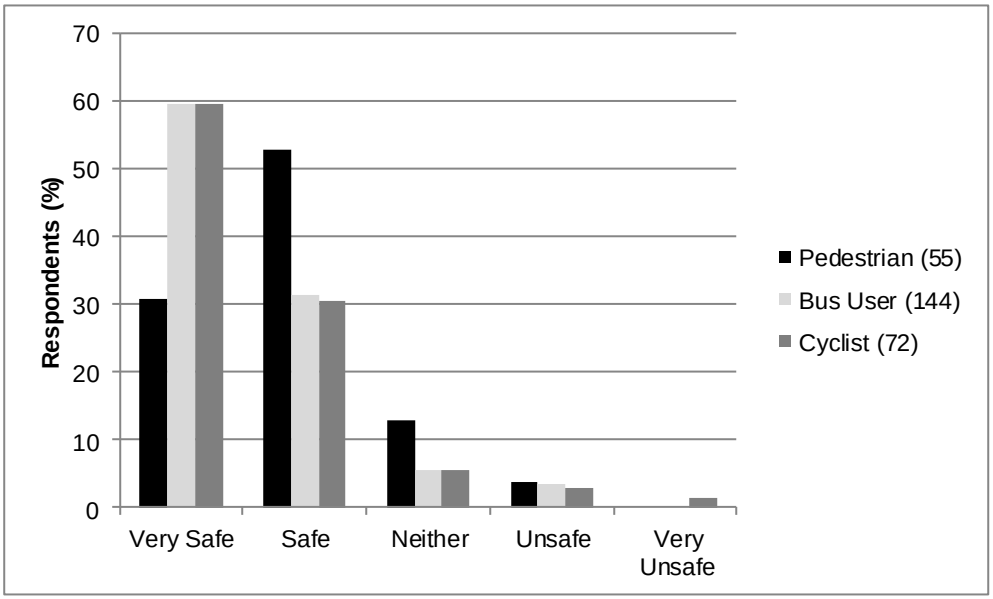


Figure 6.2: Response to ‘How safe do you feel using the floating bus stops’



7. Conclusions

It is only a year since the overall scheme has been completed and it is therefore still too early to determine trends in the data. It is generally accepted with transport schemes that monitoring is continued for at least three years after the scheme has been implemented.

Overall the results of this second round of interim post-scheme monitoring appear to continue to show a positive outcome against the key objectives, including the number of people boarding buses in the Lewes Road area and cycling. Furthermore, increases in journey times for general traffic have generally been confined to less than one minute.

Negative impacts on journey times for general traffic have been minimised. Whilst some displacement of traffic on to surrounding streets appears to have arisen, the number of additional vehicles on the effected streets is low. Low original traffic volumes will however mean that even a small increase feels more significant.