

ABERDEEN CITY COUNCIL

COMMITTEE	ENTERPRISE, PLANNING & INFRASTRUCTURE
DATE	22 January 2013
DIRECTOR	GORDON McINTOSH
TITLE OF REPORT	MARKET STREET/GUILD STREET JUNCTION – RATIONALISATION OF TURNING MOVEMENTS TO IMPROVE CAPACITY
REPORT NUMBER:	EPI /13/009

1. PURPOSE OF REPORT

This report seeks to advise the Committee on the results of the trial to temporarily ban the movement of vehicles westbound from Virginia Street into Guild Street over the period from 26/11/12 to date.

2. RECOMMENDATION(S)

That the committee;

- a. Instruct the appropriate officers to commence the necessary legal procedures for the introduction of a permanent ban on the movement of vehicles westbound from Virginia Street into Guild Street.
- b. Instruct the appropriate officers to extend the Temporary Traffic Regulation Order (TTRO) until 30 September 2013.

3. FINANCIAL IMPLICATIONS

Funding has not yet been identified within the Roads budget for 2013/14 to allow for the necessary physical alterations to the geometry of the Market Street/Guild Street junction to be carried out. The cost of these works has been estimated at £15,000. The cost for promoting the permanent Traffic Regulation Order can be accommodated within the existing budget.

4. OTHER IMPLICATIONS

It is anticipated that the introduction of a permanent ban on the movement of vehicles westbound from Virginia Street into Guild Street will reduce the potential for traffic conflicts at this busy junction and will improve junction efficiency thereby reducing congestion, delays and air pollution. The efficiencies attained from the revised junction arrangements will support the aims of the policy document Aberdeen – the Smarter City, to improve the environment and transport connections.

5. TRIAL RESULTS

The temporary order banning the movement of vehicles westbound from Virginia Street into Guild Street was implemented on the 26th November 2012.

Along with the physical measures introduced to prevent traffic travelling westbound from Virginia Street into Guild Street, alterations were made to the traffic signal timings at the junction of Guild Street and Market Street to reflect the reduction in the number of traffic stages. Alterations were also made to Market Street to improve the linkages between adjacent junctions and improve traffic flow along the corridor as a whole.

Further complimentary changes were introduced to the staging arrangement at the junction of Market Street and Commercial Quay that were intended to provide additional capacity at the junction for southbound traffic to relieve some of the congestion that builds up on Market Street, between Guild Street and Commercial Quay, and Virginia Street.

Following the implementation of the temporary order particular attention was paid to the performance of the Market Street corridor and the surrounding road network. Monitoring was carried out on a daily basis, including each weekend, until the 23rd December 2012.

The results of this monitoring are presented below, but in general the findings are positive. From observations it was concluded that during the morning and evening peak periods and main shopping times the extended queues along Virginia Street back onto the Beach Boulevard and on King Street, that have been noted in previous years, have not occurred with the same frequency. There have been occasions when there was extended queuing, however these were due to other factors affecting the road network.

In addition congestion and delays on Guild Street were reduced with Stagecoach reporting that it was much easier to take access onto the network and to turn right from Guild Street onto Market Street.

Detailed Observations of Traffic Impact

VIRGINIA STREET

- Congestion and delays during the weekday morning peak period were generally similar to that noted in 2011, although the evening peak period is improved. There has been a notable improvement during the peak shopping times where congestion and delays are much reduced compared with previous years. At the weekends the traffic queues back from the junction with Market Street did not generally reach the junction with Weigh House Square and the green time provided was more than sufficient to allow the queue to clear every cycle. However, as outlined above, there were occasions when there was extended queuing on Virginia Street due to issues elsewhere on the network, but these were managed by the ITS team and the delays minimised as far as possible.

GUILD STREET

- Congestion and delays during the morning and evening peak periods and peak shopping times were significantly reduced compared with previous years.
- With no oncoming traffic, drivers were able to turn right into Market Street unopposed and as a result less traffic congestion was noted on Guild Street and Carmelite Street. As expected this has encouraged full utilisation of both traffic lanes thereby increasing the efficiency of the junction.

MARKET STREET

- Levels of congestion and delays during the peak periods and peak shopping times were reduced compared with previous years. Although traffic queuing to access the Union Square car park regularly exceeds the capacity of the right turn lane, and reduces the capacity on Market Street, the changes made to the staging arrangement of the traffic signals at Commercial Quay to compliment the restriction at Guild Street has significantly improved the flow of traffic. The traffic turning right from Guild Street onto Market Street has taken advantage of this additional space, which has contributed to the reduced congestion levels on Guild Street described above.
- Congestion levels on Market Street between Union Street and Guild Street have also been reduced through the efficiency gained by reducing the number of stages at the Market Street/Guild Street junction from 4 to 3. This reduction in congestion has also benefitted traffic using Union Street, see below.

KING STREET

- Congestion during the peak shopping times was noted to be slightly reduced compared with previous years. Although queuing traffic still tailed back through the East North Street junction it did not reach as far as Jasmine Terrace with the same frequency as it has in previous years. This would indicate that there was not noticeable migration of traffic onto King Street following the introduction of the traffic restriction at the Market Street/Guild Street junction.

UNION STREET

- There was no noticeable impact on the volume or flow of traffic along Union Street. There has however been a reduction in the delays experienced by drivers wishing to turn right from Union Street into Market Street. These delays were previously caused by there being insufficient space available on Market Street between Union Street and Guild Street for them to move into. This has caused, on occasions, significant impact to bus operations in the city centre. The reduction in congestion levels on this stretch of Market Street has improved the performance of the right turn.

GENERAL NETWORK ISSUES

- Overall levels of congestion and delays during the peak periods and peak shopping times throughout the network were reduced compared with previous years, although there were periods when the network was under severe stress and significant congestion resulted. However it should be noted that these occurrences were far fewer than in previous years.
- During the monitoring period usage of the car parks close to the main shopping areas was very high. During the week occupancy levels were generally similar to those in 2011. However, during the weekends occupancy levels were slightly higher than those of 2011 with all of these parks close to, or at, capacity for long periods throughout the day.
- Information extracted from the Urban Traffic Control (UTC) system indicates the following facts:
 - The volume of traffic using King Street to access Union Street was generally similar to the volume in 2011
 - The volume of traffic heading eastbound on Guild Street was generally similar to that in 2011
 - The volume of traffic on Union Street was generally similar to that in 2011
 - The volume of traffic on Market Street was generally higher than experienced in 2011
- Congestion levels and delays for northbound traffic on Market Street were slightly reduced during the peak shopping periods, compared to those in 2011.

Graphs illustrating hourly recorded vehicle flows at various locations on the network are shown in Appendix A.

A plan showing the extents of the maximum typical queues on the main arterial routes is shown in Appendix B. The queues in 2011 are shown in blue, with the queues in 2012 shown in red. Colour copies will be provided to the Committee members at the meeting.

Comments from Consultees

Appendix C provides a table containing a breakdown of the comments received back from the various parties asked for their comments regarding the impact on the road network and/or their operations of the trial.

The consultation replies received have been mixed with both positive and negative responses. A significant number of the consultees did not respond which would suggest no strong feelings either way.

The response from Stagecoach was positive as they confirmed that their drivers found it much easier to turn right from Guild Street into Market Street, which corresponded with the monitoring carried out. They did however feel that traffic levels had increased on Union Street and Market Street as a result.

First Aberdeen advised that the perception was that journey times on King Street had increased as a result of the alterations at the Guild Street junction. However it was confirmed that this was taken from driver perception and was not supported by factual evidence from their vehicle locating system linked to the Real Time Bus Information system. This was also not supported by the results from our own UTC system monitoring which found reduced levels of congestion and delays when compared with previous years, which should naturally provide shorter journey times.

An initial communication was received from Aberdeen Cycle Forum (ACF) during the early stages of the trial regarding the signing of the restriction but no further comments have been received. The comments made also suggested that cyclists should be exempt from the restriction. It was felt that a reasonable alternative route via Ship Row was available which would not compromise the safety of cyclists. Consideration will be given to the upgrade of the existing signalled crossing on Virginia Street close to Weigh House Square to a Toucan facility to accommodate cyclists should the restriction be made permanent.

Aberdeen Chamber of Commerce responded, advising that their members felt that it had increased levels of congestion on Union Street/Broad Street/Market Street and King Street. They also considered that it had made access to the railway station "particularly difficult" and caused delays to HGV's using Virginia Street and Market Street. Although drivers will have less choice available to them for taking access to the railway station, it is inaccurate to suggest that it is a difficult location to access with access still being provided via Union Street, Market Street and the Denburn. The concerns regarding delays to HGV's are also not supported by the evidence gathered during the preparation of this report.

The response received from Grampian Police is very supportive of the trial. With respect to freight movements they advise that they do not believe that there have been any adverse effects on journey times for HGV's throughout the corridor. A significant benefit has been noted to traffic flow in the Market Street area as a combined result of the restriction and the complimentary alterations made to the traffic signals along the Market Street corridor.

Further observations indicated that they have not seen the tailbacks of traffic onto Beach Boulevard that were regular occurrences in previous years, although they were aware of occasions where there was significant congestion on Virginia Street. However this was not considered unexpected. In conclusion Grampian Police would fully support making the current restriction permanent.

Overall, the evidence gathered during the network monitoring carried out in late November and December 2012 and the data extracted from the UTC system shows that network performance around the Market Street area was improved over that experienced during the same period in 2011, with levels of congestion and delays being reduced. It is considered that the reasons for this are the positive impact of the restriction of vehicular movements at the junction of Market Street and Guild Street and the complimentary changes made to the traffic signals along the Market Street corridor.

Conclusion

In conclusion it is considered that the trial restriction on vehicles travelling westbound from Virginia Street into Guild Street has been a success as it has assisted in the reduction of congestion and delay on the road network around the Market Street area through the rationalisation of turning movements.

6. REPORT AUTHOR DETAILS

Donald Kinnear
Principal Technical Officer
538061
donaldk@aberdeencity.gov.uk