

ABERDEEN CITY COUNCIL

COMMITTEE	Operational Delivery
DATE	5 th March 2020
EXEMPT	No
CONFIDENTIAL	No
REPORT TITLE	Signalisation of the A944/AWPR Roundabout
REPORT NUMBER	OPE/20/062
DIRECTOR	Rob Polkinghorne
CHIEF OFFICER	Mark Reilly
REPORT AUTHOR	Steve McGuire
TERMS OF REFERENCE	5

1. PURPOSE OF REPORT

- 1.1 This report serves to inform members of the high collision rate currently being experienced at the new A944/AWPR junction at South Kingswells and to present members with the proposal, and associated impact, of signalisation of the junction which will seek to reduce collisions.
- 1.2 The report will make members aware of a proposal made by Transport Scotland to fund the capital costs for the signalisation of this junction to a cap of £360,000.

2. RECOMMENDATIONS

That the Committee

- 2.1 Note that the introduction of full signalisation of the A944/Kingswells Junction would assist greatly in reducing Road Traffic Collisions but will affect journey times for commuters travelling to and from Aberdeen, especially during peak periods:
- 2.2. Instruct the Chief Officer -Operations & Protective Services to deliver the full implementation of the traffic signal installation.

3. BACKGROUND

- 3.1 The Aberdeen Western Peripheral Route (AWPR) which fully opened in February 2019 has had a significant impact on improving connectivity and reducing congestion in and around the City of Aberdeen. A high proportion of the users of this junction are Aberdeenshire residents and businesses and since it's opening, it has generally been well received by road users, with most highlighting reductions in journey times and easier connectivity throughout the network.
- 3.2 One particular section of the new road however the A944/Kingswells junction (Appendix 1) has been the subject of numerous Road Traffic Collisions. Concerns have been raised on a regular basis by both Aberdeen and Aberdeenshire Council members on the operation of this junction both in terms of the number of collisions and the queues.
- 3.3 From its inception, this junction has operated as a grade-separated roundabout with no traffic-signal control other than for pedestrians and cyclists utilising the highly popular A944 Westhill to Aberdeen Cycle Route. It has become apparent, especially at peak times, that the strategy for allowing flows to dictate the priority of traffic movements has led to significant congestion and delays for commuters entering from both the North and South slip Roads of the AWPR. This is primarily due to the size and high-speed nature of the roundabout and additionally to the uneven flows being encountered.
- 3.4 Fast-moving traffic already on the roundabout requires drivers entering the junction to be able to match their speed almost immediately on deciding to proceed. Due to the imbalanced flows currently experienced at this junction and the resulting delays, numerous motorists are attempting to access the roundabout without taking sufficient time to correctly judge the suitability of gaps in the traffic required to allow them to enter the roundabout safely, resulting in the type of side impacts collisions currently being recorded.
- 3.5 Due to motorists being inhibited from entering the junction it is a regular occurrence for queues to develop on the AWPR slip roads during peak hour periods, which at times extend onto the mainline carriageway of the AWPR. Given the high-speed nature of the AWPR this is undesirable for Transport Scotland.
- 3.6 Road traffic collision data (RTC) obtained from Police Scotland show that since the roundabout's opening there has been on average 3 to 4 collisions happening every month, which predictably appears to have increased throughout the winter period and the extended intervals of darkness.

4. PROPOSALS FOR MITIGATION

- 4.1 As highlighted in Local Transport Note (LTN 1/09) no two roundabouts are the same and therefore there is no 'standard' solution available for dealing with

these. With regard to the A944 roundabout there are presently two feasible options available for mitigating the current situation and these are.

- a) The full signalisation of the roundabout to include all arms
- b) The introduction of controlled signalisation for the off ramps of the AWPR

- 4.2 In recent years there has been a move in the UK towards full-time signal control at roundabouts and it is now widely accepted as the preferred control arrangement where there is a particularly high Collision rate and a poor safety record as is the case with the one at the AWPR/ A944. Traffic Signals are able to manage the speed of circulatory traffic flow and provide opportunities for slip road traffic to safely enter the roundabout, and hence balance and improve the roundabout capacity.
- 4.3 In light of the above concerns Transport Scotland approached Aberdeen City Council with a proposal to fund the introduction of full-time signal control traffic signals to both AWPR arms (north and south) and both A944 arms (west and east) in an attempt to address the situation. Similar to all other signalised junctions on the AWPR which revert to Aberdeen City Council on day of opening, this funding is for the capital costs associated with their implementation on our road network. It does not include the future maintenance costs of the signals.
- 4.4 Officers from the Intelligent Transportation Systems (ITS) team were instructed to carry out evaluation work on the proposals put forward by Transport Scotland. The junction was assessed for the AM and PM Peak periods using traffic flows from existing traffic modelling and survey information. An additional survey was also carried out during a three-day period in November during the AM and PM Peak periods. This survey was to establish the current base level of congestion for the current layout.
- 4.5 The result of these surveys highlighted that the current layout resulted in congestion on all arms of the roundabout however the North and South slip approaches were particularly affected with overcapacity during the AM and PM peak periods resulting in queues of approximately 70-80 vehicles forming on the North and South approaches. These queues were frequently longer than the available slip road inhibiting the free- flowing traffic movements of vehicles on the AWPR and increasing risk to motorists.
- 4.6 Queues were also being experienced during the AM Peak period by motorists travelling east along the A944 and subsequently during the PM Peak period by motorists travelling West along the A944.
- 4.7 On average, eastbound traffic is currently experiencing queues during the AM Peak of over 100 vehicles with westbound traffic experiencing the same level of queuing for the PM peak period. Extensive queuing is also being experienced on the on-off slips however the difficulties motorist encounter in attempting to use these on-off slips is considerably greater leading to driver frustration and higher than average collision rates.
- 4.8 Initial modelling of the proposed signalised layout of the AWPR / A944 roundabout indicated that there would be an increase in queuing on both legs of

the A944 during peak periods, with both predicted to have an increase of average queues than the current operation.

- 4.9 The introduction of signals would however significantly improve safety for traffic exiting the AWPR and improve driver confidence. Aberdeenshire Council have stated that they welcome the positive impact in reducing road traffic collisions which introducing signals should have and this view is also supported by both Transport Scotland and Police Scotland.
- 4.10 Aberdeenshire Council have also stated that their officers “would be happy to work with colleagues at Aberdeen City and Transport Scotland on the details of the proposals and in any ongoing reviews that are necessary on how the revised arrangements operate in the future. ”

5. COLLISION HISTORY

- 5.1 Provisional road traffic collision (RTC) data has been made available by Police Scotland for the period since opening of the A944/AWPR junction in February 2019. This data is provided in Table 1 below. RTC data is verified annually by Transport Scotland with the data being made publicly available in the October of the following year therefore the level of information available for this assessment is limited. A total of 29 incidents have been recorded with 4 serious injury accidents being identified, however the volume of slight and damage only accidents cannot be determined.
- 5.2 It should be noted that due to changes to the recording system and the allocation of resources, Police Scotland do not attend or record damage only incidents on a routine basis. This means that the data collected below will include “over the counter” reports of incidents and will not include all incidents that may have occurred at the junction.
- 5.3 No trends can be identified from the information provided however the volume of incidents recorded raises concern in itself. Anecdotal reports point to side-on collisions at the slip roads and driver behaviour traversing the junction. Enquiries have highlighted difficulties in accessing the junction from the slip roads due to the speed of vehicles on the circulatory carriageway and drivers are having difficulty judging the gap acceptance. Queues extending from the slip roads onto the A90 could also result in rear end collisions if not managed efficiently.
- 5.4 To a certain extent, these types of incident may be expected on a new junction which is significantly different from existing provisions within Aberdeen’s road network however the volume of incidents and the continued incident rate does suggest other factors are at play.
- 5.5 Correspondence has been received by the Traffic Management Team regarding confusion caused by the existing set up whereby drivers new to the junction appear to believe that the junction is signalised due to the presence of the remote pedestrian crossing point on the southbound slip road. Reports have been received of drivers viewing the green light as a permission to access the roundabout and thereby not halting at the give way line.

- 5.6 The implementation of traffic signal controls at the junction would enable drivers to access the junction in a managed and timely manner, reducing the potential for conflict. The signals would integrate pedestrian/ cycle provisions with the potential to pull the crossings closer to the junction, minimising deflection from the desire line for the active travel route and providing additional controlled crossing facilities for users. These are points of concern that have been raised by members of the cycling community.

Table 1: Provisional RTC data February – December 2019.

Date of Incident	Incident Description	Injury level
14-Feb-2019	2 car RTC dog in carriageway	Unavailable
06-Mar-2019	Police Scotland not required to attend	Damage only
16-Mar-2019	1 car RTC with barrier -	Unavailable
29-Mar-2019	2 car RTC/obstruction	Unavailable
05-Apr-2019	2 vehicle RTC on roundabout	Unavailable
25-Apr-2019	Police Scotland not required to attend	Unavailable
28-Apr-2019	2 car RTC – ambulance required	Serious Injury
06-May-2019	1 car RTC on wrong side of carriageway	Unavailable
14-May-2019	HGV and 1 car RTC – Ambulance required	Serious Injury
23-May-2019	Police Scotland not required to attend	Damage only
10-Jun-2019	2 car RTC on roundabout	Unavailable
23-Jun-2019	Police Scotland not required to attend	Unavailable
28-Jun-2019	2 car RTC – Ambulance required	Serious Injury
29-Aug-2019	Single vehicle RTC – car left carriageway	Unavailable
4-Sept-2019	1 vehicle RTC – witnessed	Unavailable
10-Sept-2019	2 car RTC	Unavailable
10-Sept-2019	4 Vehicle RTC – Ambulance required	Serious Injury
13-Sept-2019	Police Scotland not required to attend	Unavailable

16-Sept-2019	2 car RTC	Unavailable
20-Sept-2019	2 car RTC	Unavailable
24-Oct-2019	Police Scotland not required to attend	Unavailable
09-Nov-2019	2 car RTC	Unavailable
16-Nov-2019	Police Scotland not required to attend	Damage only
21-Nov-2019	2car RTC	Unavailable
01-Dec-2019	RTC in central reservation	Unavailable
03-Dec-2019	1 car RTC	Unavailable
03-Dec-2019	Police Scotland not required to attend	Unavailable
29-Dec-2019	2 car RTC	Unavailable
31-Dec-2019	Police Scotland not required to attend	Damage only

1. IMPLEMENTATION

- 6.1 Implementation would require liaison with all stakeholders prior to commencement of the works. Once agreed, officers are looking to programme the initial works to commence in April 2020 with final completion estimated for June 2020

2. FINANCIAL IMPLICATIONS

- 7.1 Aberdeen City Council provided Transport Scotland with an estimated capital cost of £360,000 for installation of traffic signals at this junction. Transport Scotland subsequently proposed to Aberdeen City Council that it would meet the capital costs of installation up to a cap of £360,000. There will however be an ongoing financial obligation of approximately £15,000 per annum for the maintenance of the traffic signals, which will need to be funded from existing budgets.

8. LEGAL IMPLICATIONS

- 8.1 In accordance with the Roads (Scotland) Act 1984, as local roads authority, Aberdeen City Council shall manage and maintain all such roads in their area and have powers to reconstruct, alter, widen, improve or renew any such road or to determine the means by which the public right of passage over it, or over any part of it, may be exercised

9. MANAGEMENT OF RISK

Negative Risks

- 9.1 Detrimental effect on traffic flows and an increase in journey times for traffic using the A944
- 9.2 Financial impact on Aberdeen City Council for the annual maintenance of the traffic signal equipment and infrastructure.

	Risk	Low (L), Medium (M), High (H)	Mitigation
Financial	The increased demand on maintenance budget in the future from maintaining the signals.	M	
Legal	None	M	
Employee	Increase in current workload as staff would initially require reviewing and approve the signal design and additionally procure and project manage the installation of the signal equipment	M	
Customer	risk of accident or injury to commuters.	M	Implement the project and demonstrate Aberdeen City Councils commitment to actively manage and eliminate risk wherever possible.
Environment	N/A		
Technology	N/A		
Reputational	public safety and usability of this roundabout will continue to increase.	M	Progress with the proposals for the signalisation of the roundabout.

10. OUTCOMES

Local Outcome Improvement Plan Themes	
	Impact of Report
Prosperous Economy	Reduction of impacts to individuals/business through damage to vehicles and property, loss of productivity, demands on the emergency services, as well as potential medical and insurance costs.
Prosperous People	The proposal links to protect people from harm through improved accessibility and the resulting road safety benefits.
Prosperous Place	Listening to what matters to our communities by using and developing partner-wide intelligence to address areas of concern.

Design Principles of Target Operating Model	
	Impact of Report
Customer Service Design	
Organisational Design	
Governance	
Workforce	
Process Design	
Technology	Introduction of a technological control
Partnerships and Alliances	Working with Transport Scotland, Aberdeenshire Council and Police Scotland to action road safety concerns

11. IMPACT ASSESSMENTS

Assessment	Outcome
Equality & Human Rights Impact Assessment	Not required
Data Protection Impact Assessment	Not required
Duty of Due Regard / Fairer Scotland Duty	Not applicable

12. BACKGROUND PAPERS

None.

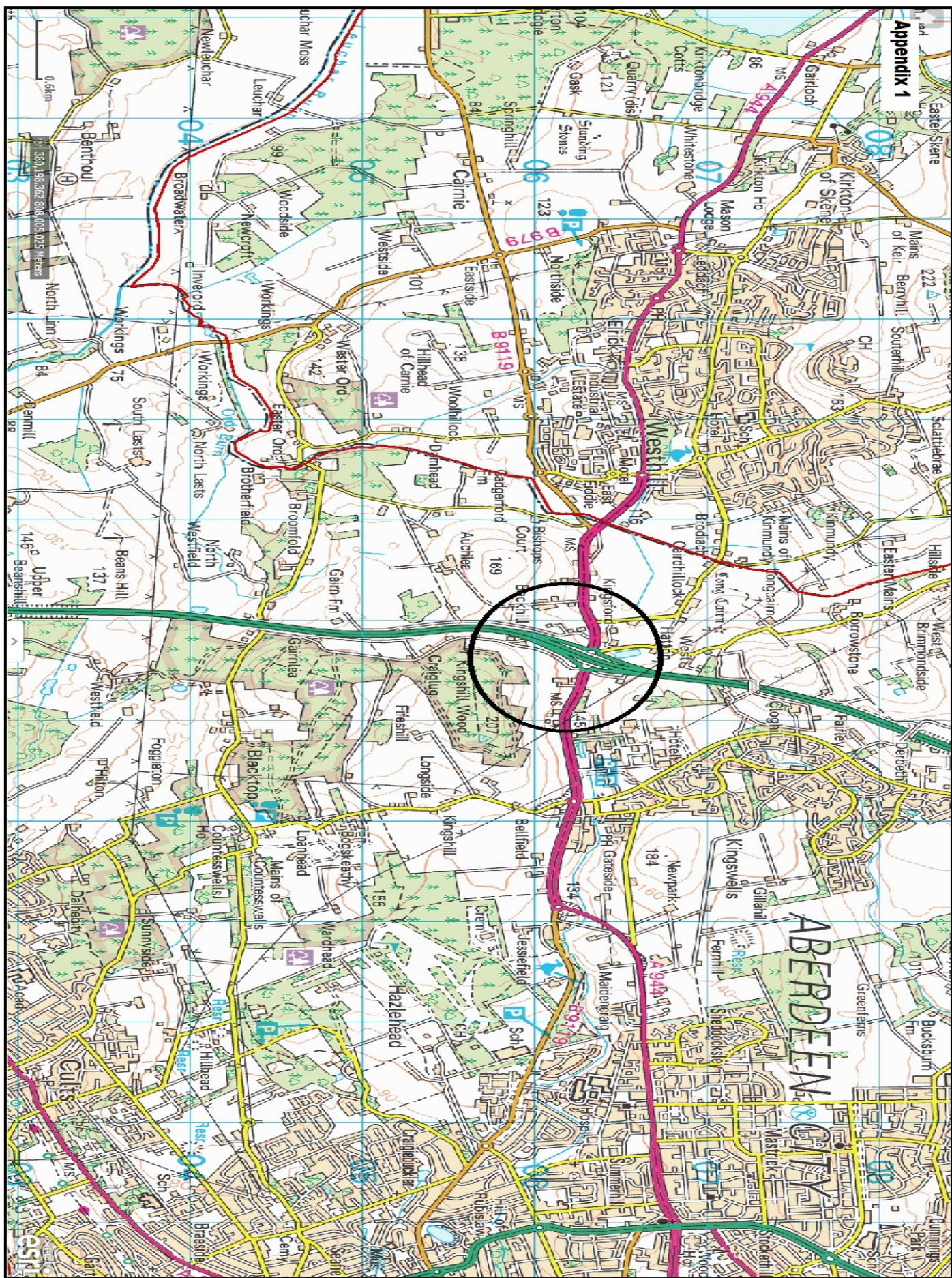
13. APPENDICES (if applicable)

Appendix 1. Graphic of AWPR/A944 Roundabout location.

14. REPORT AUTHOR CONTACT DETAILS

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Appendix 1-Graphic Map of Location



APPENDIX 1