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**Response to Regulation 28 Report to Prevent Future Deaths following the inquest into the death of George James Ainsworth which concluded on 24<sup>th</sup> August 2014,**

The Council has been requested to carry out a review of the junction of Deansgate and Knowsley St with regard to the following:

- i. A general review of the pedestrian crossing at the junction of Deansgate and Knowsley Street with specific consideration of the erection of guard rails to limit pedestrians crossing the road to the confines of the pedestrian crossing.
- it. The time allowed by the automated traffic signal at the pedestrian crossing to allow sufficient time for pedestrians to cross the road within the area of the pedestrian crossing.

Response to the Coroner's report

- i. The Council has reviewed the junction as requested. This has involved looking at the geometry of the junction; the road network; a site inspection with Greater Manchester Police and a review of the provision of pedestrian guard rail. The Council is also grateful to the Coroner for allowing copies of the CCTV footage of the incident from both the bus and the town centre CCTV system to be made available to them which has been useful in carrying out this review.
- ii. The geometry of the junction has been reviewed to see if any alterations could be made to make it easier for buses and other large vehicles to pass in opposite directions at the same time. The difficulty is with negotiating the 90 degree bend rather than the width of the road as long rigid vehicles such as buses can turn only once the majority of the body of the vehicle has passed the apex of the bend in order to avoid overrunning the nearside kerb. The road is actually widened to 10m wide at the bend and in theory two busses can pass with care if the bus on the outside of the bend uses the full width of the road. In practise the majority of bus drivers choose not to do this and prefer to be more cautious and give way to each other. It is unlikely that widening the road any further would alter this behaviour. It would also have other disadvantages such as narrowing the footways for pedestrians. However to put this into perspective, the need for drivers of buses and similar long vehicles to take different alignments and give way to other vehicles is not unusual and occurs many times on virtually every journey.
- iii. The road at the junction of Deansgate and Knowsley street is two way. However, Knowsley St in its' southerly direction is a bus lane from the junction with St Georges Rd as far as Corporation Street. This reduces the amount of general traffic that passes through the junction as only a small amount of vehicles enter the area from Corporation Street and Palatine Street, mainly service vehicles or traffic leaving the Central St car park. The bus route allows services to access the northern area of the town centre.

Deansgate in the easterly direction and Knowsley St in the northerly direction are open to all traffic. Again many bus services use the route, picking up passengers at stops on Deansgate and Knowsley Street before heading to destinations to the north of the borough and beyond.

Making Deansgate and Knowsley St one way in either direction would reduce the conflict at the junction for large vehicles travelling in opposite directions but there are many disadvantages which make this option unviable and introduce possible road safety issues.

A one way system would mean that bus services in one direction would no longer be able to access stops in the north of the town centre. This would mean passengers would have to walk considerably further to either board or alight the bus. This could make the town centre less accessible for the less able bodied. It would also mean that people would have to cross busy roads to get to and from their buses. Finally it would increase bus journey times further inconveniencing passengers.

General traffic would still have to access the areas around Palatine St and Corporation St which would involve the removal of the bus lane if the one way was chosen in the southerly direction. This would allow a greater amount of through traffic to use the route which could be a road safety issue for the busy town centre area. In addition the speed of large vehicles could increase as the driver would know that there was no possibility of meeting another large vehicle.

Finally a shuttle working system around the junction whereby traffic signals would alternate to allow vehicles to travel in one direction only at any time has been discounted on safety grounds. This is because pedestrians could see a vehicle stopped at the traffic signal and mistakenly believe that it is safe to cross where as in fact a vehicle could be approaching from the apposite direction.

- iv. On 14<sup>th</sup> September 2015 a further site visit was made by Malcolm Fairhurst of Bolton Council and [REDACTED] of Greater Manchester Police (See Appendix 1 for qualifications and experience) to look at possible improvements to the junction and crossing as a consequence of the Coroner's request. Suggestions included the addition of zig-zag markings to increase the conspicuity of the crossing, the installation of a TRIXI mirror to help drivers with blind spot visibility and some method to reduce vehicle speeds around the bend.

The introduction of zig -zag markings is being considered, however their effectiveness needs to be determined as the stop lines from which they extend are quite a long way back from the crossing, due to the swept paths of large vehicles and so they may not be associated with the crossing by both vehicles and users.

TRIXI mirrors are used at traffic signal junctions with left turns so that drivers of large vehicles can check for cyclists travelling up the nearside of the vehicle on the which is a blind spot for many such vehicles which can result in left turning vehicles colliding with cyclists who are travelling straight on.

A similar type of mirror may assist drivers of large vehicles to see into their blind spots but it is difficult to find a location for such a mirror as different vehicles have different blind spot positions so unfortunately it seems that such a mirror will not be suitable in this case.

It was observed that whilst virtually all vehicles negotiated the corner below the maximum speed limit some vehicles, including buses were travelling too fast for the location.

Road humps and plateaus have been considered but the level of the footway and carriageway around the corner mean that it is not feasible to install such features here. The Council is therefore considering the introduction of a 20mph speed limit on Deansgate and Knowsley St. 20 mph roundel markings could then also be put on the carriageway to which may help to keep speeds down.

- v. The Coroner specifically required the review to look at erection of guardrail.

The Department for Transport produced Local Transport Note 2/09 'Pedestrian Guardrailling' in 2009 to assist highway engineers in assessing whether or not PGR should be provided.

This document advises that, used correctly in the right location, pedestrian guard railing (PGR) can improve pedestrian safety by guiding them to safe places to cross the road and prevent them from inadvertently walking into the carriageway.

However, it also states that for many years now there have been calls to review the use of PGR as it inconvenienced pedestrians, cluttered up streets and made an unattractive environment giving vehicles a sense of priority in town centres. In the worst cases PGR has caused more accidents than it has solved as pedestrians walk around it in the carriageway or jump over it in order to get to their destination in the most direct route. In general, it is recommended that the installation of new guardrailling should not be considered if alternative safety measures could be used.

The Deansgate / Knowsley St junction was assessed in accordance with this guidance document when the crossing was installed and the conclusion, in accordance with the methodology in LTN 2/09, was that the installation of guardrail 'would be unlikely to improve correct usage of the crossing' and it was therefore considered that the installation of guardrail was not necessary.

The main reason for this conclusion is that a significant proportion of pedestrians either start or end their crossing of the road within the designated crossing area outside McDonalds. In addition most pedestrians cross within the area between the traffic signal stop lines at either side of the junction and are in effect crossing in the controlled safe area when the 'green man' is showing. The installation of pedestrian guardrail would have no benefit to these pedestrians and indeed as it could actually mean that more pedestrians cross outside the safe area in order to make the most direct route to their destinations.

In addition the installation of pedestrian guardrail could cause visibility problems for vehicles emerging from the junctions with Palatine St and Ridgeway Gates.

Following the inquest and as part of the review of the junction the assessment for the installation of PGR was carried out again in case pedestrian movements had changed since the previous assessment in 2012. However, the results of the assessment came to the same conclusion i.e. that the installation of guardrail would be unlikely to improve correct usage of the crossing.

As the council now has been able to view the CCTV footage of the accident involving Mr Ainsworth it can consider if the installation of PGR could have prevented the accident or future accidents.

The footage shows that Mr Ainsworth entered the carriageway approximately 1.5m north of the traffic signal pole and push button unit. Although he is outside the limits of the marked crossing he is between the studs and the stop line. The traffic signal is, and has been for a significant period before, at green for traffic and the red man is showing for pedestrians. He can be clearly seen through the bus doors from the entrance door camera in the drivers cab and therefore presumably the bus would have been visible to him if he had been looking to the right, when he is approximately 1,0m from the kerb. Mr Ainsworth remains visible from this camera for the next 5 seconds until the collision with the bus occurs and again the bus would have visible to him during this time. At the point of collision he is between 1/3 and 1/4 way across the road.

However, there are two issues which could mean that the bus driver didn't see Mr Ainsworth during this time. The first is that there is a blind spot from his position looking towards Mr Ainsworth, As stated by the police collision investigator at the inquest, this could be caused by the pillars forming the bus body but in addition it can be seen that the security screen cab door and the licence holders in the side window could also contribute to obscuring the drivers vision. It is very unlikely that Mr Ainsworth is in the blind spot for all of the time that he is visible, particularly from when he has entered the road. Therefore the second factor is that the driver appears to be concentrating on the off side of the vehicle rather than the near side possibly due to the bus passing in the opposite direction. He appears to be looking to the off side immediately before and at the point of impact.

Taking these factors into account it is necessary to determine if the provision of PGR would have prevented the accident. It is not possible to predict whether if PGR was present Mr Ainsworth would have been deterred from crossing where he did or if he would have waited at the crossing point for the crossing to activate or whether he would have simply walked around the end of the PGR (he crossed at most only 1.0m from the end of where any PGR would be placed) and continued crossing in a north easterly direction across the road towards Corporation St as he did when he was hit by the bus.

As far as the bus driver is concerned, the provision of PGR could possibly have assisted the driver by preventing a pedestrian from stepping off the footway into the road on the near side of the vehicle into a possible blind spot when he is

concentrating on the clearance to the off side of the vehicle. But it would have no effect if somebody walked around it and started to cross at the correct crossing point which is what the assessment in accordance with LTN 2/09 suggests could be the most likely situation.

The council therefore has to make a judgement as to whether the provision of PGR would prevent future accidents or if it would actually cause further accidents. In its favour it could deter pedestrians from crossing away from the crossing and possibly prevent them from entering the carriageway at the point where there is the poorest vision for a bus driver.

Conversely an assessment in accordance with national guidance (LTN 2/09) has found that it would be unlikely to be of use as the majority of pedestrians start or finish crossing the road at the crossing point. There is also the possibility that a pedestrian will walk around it in order to take the most direct route to their destination. Guardrailings on both sides of the road could actually trap any pedestrians doing such from getting to the safety of the footway if a vehicle was approaching. There is also the additional issue with PGR adding to the street clutter and obscuring visibility. The PGR could also be abused and used as climbing frames etc. by youths that congregate around Me Donalds at various times of the day. Anybody doing so runs the risk of falling into the road. It is for these reasons, in addition to the results of the assessment in accordance with LTN 2/09, that the council has not previously installed PGR at this location and has major concerns in doing so now.

A possible compromise would be to install a section of guardrailings of a style in keeping with the town centre, from the edge of the pedestrian crossing up to the first bollard on Knowsley St. Alternatively post and rail cycle stands could perform the same function. This would prevent or deter a pedestrian from crossing at the point where a bus appears to have least visibility on its near side. This would also still allow people to cross the road safely from the other side of the road and further up Knowsley St within the area between the stop lines for traffic, which can be done safely particular when the crossing is activated for pedestrians. This installation would be on a carefully monitored trial basis for an initial period of 6 months. If problems are encountered it would be removed.

- vi The timing of the traffic signals currently allows 8.5 seconds for a pedestrian to cross the road whilst the 'green man' indicator is showing. The road is 10 metres wide at the crossing point for which the minimum crossing time recommended is 8.3 seconds using a pedestrian speed of 1.2m/s. In addition from the time the 'green man' changes to the 'red man' indicator and the traffic signal turns to green for traffic allowing vehicles to proceed there is a period of 8 seconds to allow those already on the crossing to clear it. Pedestrians should not start to cross the road once the 'red man' starts to show.

It should be emphasised that the time allowed for pedestrians cross the road whilst the 'green man' is showing has no relevance to this particular accident as from the

CCTV recordings it can be seen that the signal was on green for traffic when the bus passed though the junction although it was just turning to amber as the bus turned the corner. Mr Ainsworth was already crossing the road at this time and would have started doing so when the signal had been green for traffic ('red man' for pedestrians) and had been so for some time.

Whilst the Council hasn't received any complaints directly regarding the length of time allowed for pedestrians to cross the road, those from [REDACTED] Mat the inquest being the first, it will request Transport for Greater Manchester man Traffic Control Unit, which is responsible for the installation and operation of the signals, to review the timings and see if there is an opportunity to extend the 'green man' timings.

#### Summary of Proposals and Timescale for Implementation

<b>Proposal</b>	<b>Timescale for implementation</b>	<b>Notes</b>
Zig-zags at approach to crossing	6 months	Further investigation into suitability to be carried out
20mph limit on Deansgate & Knowsley St	12 months	Requires Council approval and Traffic Regulation Order Process
PGR on Knowsley St west side	6 months	To be monitored and reviewed after 6 months
Additional time for pedestrian phase on crossing	3 months	TfGM to be requested to review and implement

Signed on behalf of the Borough Council of Bolton and the Chief Executive

[REDACTED]

Interim Chief Executive

Dated this 10<sup>th</sup> day of November 2015