Response to the Belfast Rapid Transit Public Consultation on Route Options

Dr Wesley Johnston

This submission is made in my capacity as:

- A historian who has studied the history and impact of Belfast's road transport system in detail;
- A commentator on the local road network via a web site at www.wesleyjohnston.com/roads;
- A user of the Northern Ireland road network;
- A resident of east Belfast;
- A business owner with a business based in Newtownards.

SUMMARY

1. I welcome the opportunity to comment on the proposed Belfast Rapid Transit system.
2. I support the principle of a rapid transit system for Belfast, and applaud the DRD for putting forward specific proposals. We are now at the point where improved public transport facilities are a vital strategy for managing the continued increase in commuter traffic into Belfast City Centre.
3. This submission objects to the proposed use of an on-street route on the section of A20 Upper Newtownards Road between A55 Knock Road and Quarry Corner for two reasons.
4. Firstly, the proposals as they stand fail to make an adequate distinction between commuter traffic, local traffic and strategic traffic, makes journeys more difficult for people who cannot take advantage of EWAY, and will damage the economy of the Ards region.
5. Secondly, by creating a "pinch point", the proposals will generate traffic congestion at Quarry Corner, leading to traffic jams that are well beyond the capacity of EWAY to absorb and which will encourage traffic onto parallel, less appropriate, roads.
6. I include recommendations on how to reduce the impact of the pinch point.
7. This submission relates only to the eastern part of EWAY. No opposition to CITI, WWAY or the part of EWAY west of the A55 Knock Road is stated or implied in this submission.

ROLE OF THE A20 UPPER NEWTOWNARDS ROAD

8. The Belfast Metropolitan Transport Plan (BMTP) defines a small number of key roads as forming the **Strategic Network**. This consists of roads that are deemed critical to

the economy by linking together different regions of Northern Ireland.

9. Specifically, the BMTP states that the purpose of the Strategic Network is to "*safely and efficiently cater for longer-distance movements of people and freight to, from and between different parts of the BMA – particularly locations of regional importance such as Belfast city centre, the Regional Gateways and potential strategic development and employment locations*".

10. The A20 Upper Newtownards Road is defined as part of the strategic road network since **it is the artery that connects the Ards area to most of the rest of Northern Ireland**.

11. The A20 Upper Newtownards Road therefore carries out three functions:
(A) A local access route for the many residential and commercial properties and roads that front onto it.
(B) A commuter route that brings people from the edge of Belfast into the city centre.
(C) A long-distance strategic route connecting the Ards Peninsula to the rest of Northern Ireland.

12. This is very different from the Falls Road, along which the WWAY is to be routed, as the Falls Road carries out the first and second of these functions, but not the third, which is carried out by the M1 motorway. The Falls Road is not part of the strategic road network. This makes the role of the A20 materially different from the Falls Road, and makes the impact of EWAY materially different from WWAY.

13. The BMTP further states that the strategic road network, including the A20 Upper Newtownards Road, will be managed up to 2025 through "*Route Management Strategies (RMS) to better facilitate the safe and efficient movement of longer-distance traffic*" including "*parking/stopping restrictions*". In other words, the BMTP regards it as vital that as few impediments as possible are put in the way of longer-distance traffic on the strategic road network.

14. The BMTP specifically names the A20 Upper Newtownards Road as a road that will particularly require such an RMS because this is a road on which "*major capacity enhancements are not proposed*".

15. It is, therefore, the pre-existing policy of the Department for Regional Development to support the role of the A20 Upper Newtownards Road as a key strategic route for long-distance traffic.

16. This existing policy is severely compromised by the proposed implementation of the EWAY route along the portion of the A20 that is part of the strategic road network, ie the section east of A55 Knock Road, for the following reasons.

THE STRATEGY OF DISPLACING TRAFFIC

17. At the BRT Public Consultation exhibition at Connswater Shopping Centre in 2011, a DRD official stated that **displacing "cars"** from the A20 Upper Newtownards Road was a **deliberate strategy** to encourage use of BRT.
18. On routes that are predominantly commuter routes (ie most of the arterial roads within Belfast such as the lower Newtownards Road, Castlereagh Road, Ormeau Road) this is an appropriate strategy since the traffic that will be displaced will be predominantly commuter traffic, and it is important that public transport can offer an advantage to commuters over cars.
19. However, this argument cannot apply to the A20 Upper Newtownards Road east of the A55 because the Upper Newtownards Road carries a large proportion of **strategic** traffic, which is different in substance from commuter traffic.
20. For example, 7% of all traffic on this road is actually made up of goods vehicles [1].
21. Fully 30% of all traffic on the Upper Newtownards Road between 8am and 9am is actually travelling out of the city, implying a significant strategic function for the road [2].
22. It is also highly unlikely that all the commuters on the A20 are have a destination in the city centre, given the huge number of employment centres scattered throughout the Belfast Metropolitan Area. Many commuters, therefore, could not reasonably avail of BRT even if they wished to and will continue to require the use of the A20.
23. The strategic network, by definition, carries large volumes of traffic whose destination is outside Belfast. The A20 connects the Newtownards and Ards Peninsula region to the rest of Northern Ireland. The entire region depends on the A20 for its economic wellbeing.
24. The BRT's "displacement" strategy is cavalier in the way (a) it fails to take account of the A20's strategic status, and (b) fails to discriminate between commuter traffic and strategic traffic that is vital to the economic wellbeing of the Ards region, and by extension to Northern Ireland.

PREDICTED PATRONAGE

25. The below analysis is based on figures for Quarry Corner, as this is the proposed site of the park-and-ride that will form the start of the EWAY route into the city centre, and because this is the point that the existing road will be reduced from two lanes to one lane each way. This pinch point is of critical importance, as shall be outlined below.
26. The annual average daily traffic figure at Quarry Corner in 2007 was 23,820 vehicles, of which 92.3% were cars, 7.2% were goods vehicles and 0.5% were buses. The predicted figure for 2010 was 25,037 [1].
27. In the morning peak in 2007, 1560 vehicles were recorded travelling per hour citybound between 07:00 and 09:00 [2]. If we define it as this two hour period, this gives a total of **3120** vehicles travelling citybound on the A20 in the morning peak.
28. The 2008 BRT Strategic Outline Case made predictions of likely patronage. This was based on a Greenway route, and hence may change slightly when re-appraised for the Upper Newtownards Route. This document predicted that between 215 and 343 people will use the park-and-ride site at Quarry Corner in the morning peak per hour, giving a total of between **430** and **686** users boarding at Quarry Corner in the period 07:00 to 09:00 (p174).
29. There is no way to know ahead of time whether EWAY really will attract this many users, but we must give the proposals the benefit of the doubt in this regard.
30. Since the 2011 consultation document indicates that there will be "up to" 500 parking spaces at Quarry Corner, in practice it **cannot take more than 500** cars off the road at this point.
31. Therefore, if it operates at its maximum capacity of 500 vehicles it will reduce the morning peak flow on the A20 at Quarry Corner from 3120 to 2620, **a reduction of 16%**. Therefore, even when the park-and-ride is operating at its maximum capacity, 84% of the existing traffic volume will continue to use the A20 towards Belfast in the morning peak.

THE QUARRY CORNER PINCH POINT (CITYBOUND)

32. Both the 2008 Strategic Outline Case, and the 2011 consultation documents indicate that the two lanes of general traffic coming over the hill on the dual-carriageway from Newtownards will be **merged** into a single lane immediately after the set of traffic lights that will presumably be built to give access to the park and ride at Quarry Corner.
33. Once past the pinch point, traffic will probably flow much

as it did before, since it is relatively straightforward to keep traffic flowing once it is in a single lane. **The citybound pinch point is the concern, not the reduced number of lanes that follow it**.

34. Merge points like this may look like a good idea when drawn on maps, but in reality they cause traffic chaos on roads with these traffic volumes. This is why traffic engineers avoid them if at all possible.
35. Merges like this only work effectively when a significant percentage of traffic is turning off the road at that point. The best example of this setup is the junction of the A20 with the A55 Outer Ring where a merge from two lanes to one would work well since significant traffic volumes are turning left or right anyway, facilitating the merge.
36. However it is not possible for either the current level of peak citybound traffic, or the reduced volume of 84% when the proposed system is running at capacity, to smoothly merge into half the road space at Quarry Corner. This arrangement will inevitably create a brand new traffic jam on the approach to Quarry Corner. We can demonstrate this to be true because of the situation at Greenisland (see below).
37. Most significantly, motorists wishing to enter the park-and-ride at Quarry Corner and use BRT will be caught up in this traffic jam along with everyone else, creating new delays for public transport users.
38. This reality cannot be denied. At the BRT Public Consultation exhibition at Connswater Shopping Centre in 2011, a DRD official confirmed that this prediction was **accurate**, and that a traffic jam would indeed form. He even added that part of the rationale of siting the lane-reduction pinch point at Quarry Corner was that the **ensuing traffic jam would be in the countryside**.
39. In other words, the artificially generated queue would be generating so much **new pollution** that it would have to be kept outside the urban area. This is remarkable for a policy ultimately motivated by an attempt to **reduce pollution** from motor vehicles.

A WARNING FROM THE A2 AT GREENISLAND

40. The A2 at Greenisland is remarkably similar to the A20 at Upper Newtownards Road. It
    (A) is also a strategic route with similar traffic composition;
    (B) carries around 26,000 vehicles per day north of Greenisland [3], very similar to the A20.
    (C) citybound traffic merges from two to one lanes north of the village.

41. Note also that the A2 route **already has** a dedicated public transport system running beside it, ie the railway line, that starts at a park-and-ride facility in Carrickfergus and runs directly into the city centre, also passing key employment locations such as the University of Ulster, Northern Regional College, and Cityside shopping centre.
42. Hence, the situation at Greenisland is comparable with how the A20 will look **following** completion of EWAY.
43. The arrangement at Greenisland causes **lengthy traffic jams on a daily basis**, displaces traffic onto other, often inappropriate, parallel routes and must act to discourage investment in the Carrickfergus area.
44. This is not a recent phenomenon - the traffic jams have been occurring for many years (even when traffic levels were lower than what is predicted for Quarry Corner when the BRT park-and-ride is running at capacity).
45. DRD's official view is that the situation at Greenisland "*is a source of congestion and delays at peak times, not least to bus services, and has been identified in the Belfast Metropolitan Transport Plan 2015 (paragraph 6.29) as a bottleneck on the Belfast Metropolitan Area's strategic network.*" [4]
46. DRD currently plan to spend £55m removing this bottleneck.
47. **The EWAY proposals involve consciously creating an identical setup on the A20 at Quarry Corner. This is pure folly.**

IMPACT ON REMAINING TRAFFIC

48. The proposed pinch point at Quarry Corner will create a **brand new traffic jam.** Since motorists are not automatons, they will not choose to sit obediently in the queue. We know that up to 16% will switch to EWAY. Of the remaining 84% who cannot do so, many will seek alternative routes.
49. A road system forms a net, whereas public transport is linear. Therefore car drivers will always be able to seek alternative routes when presented with a predictable traffic jam. They are different in form - one cannot replace the other as if they were interchangeable.
50. By far the most obvious alternative route from Newtownards is Belfast Road, which rejoins the A20 at Quarry Corner. This will allow people to "skip the queue" using the new traffic lights that will presumably be installed there. This is an unclassified rural road, and inappropriate for this additional traffic.
51. A second obvious alternative route into Belfast is the

Craigantlet Hills route from Newtownards to Dundonald, or further along to the A55 Outer Ring. This is a rural road, and again inappropriate for all this additional traffic.

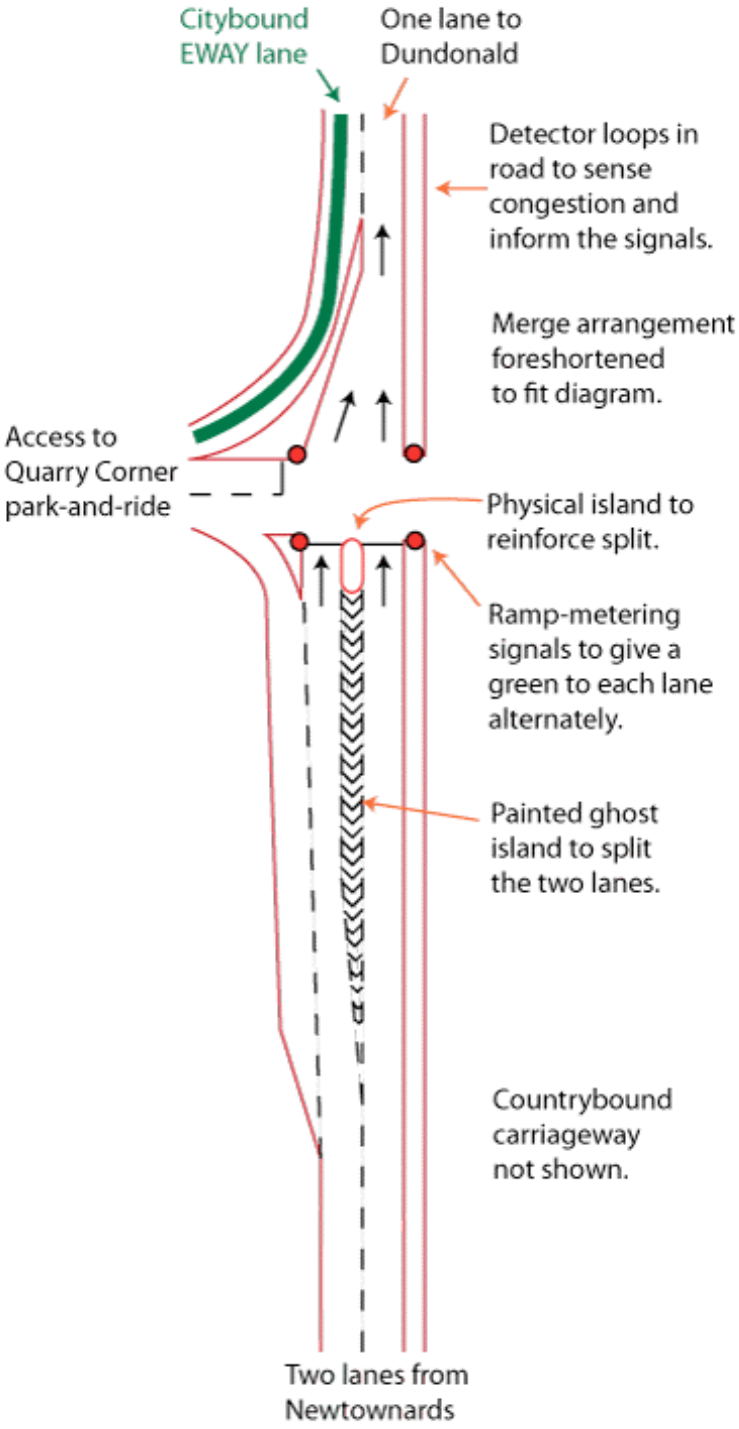
52. A third option is for Newtownards traffic to switch to the A22 Comber Road/King's Road route.
53. In other words, while traffic levels may very well fall on the A20 Upper Newtownards Road following opening, this will be because EWAY will **actively encourage significant growth in traffic on adjacent roads** that are not appropriate places for strategic traffic.
54. As the traffic jam at Quarry Corner will be perceived as an deliberate and artificial creation, as opposed to simply the reality of living in an urban area, it will cause resentment amongst the travelling public that will be unfairly directed against public transport in general.

ALTERNATIVES

55. EWAY, WWAY and CITI are bold proposals that should be taken forward.
56. However, reducing the A20 to one lane at Quarry Corner is folly for the reasons outlined, and must not happen in the proposed form.
57. The **first** alternative is to maintain two lanes for general traffic until the A55 Outer Ring. This would eliminate the merge issue, but would negate much of the benefit of EWAY and is therefore not likely to be appealing or viable.
58. The **second** alternative is to route EWAY away from the A20 on this stretch, along the Comber Greenway. This option has been rejected far too quickly. Of course it will be detrimental to the Greenway. However, the Greenway route has been reserved for mass transit for over a century. There is also a sense in which there is a 'greater good'. This is an **ideal** route for rapid transit. It is very short sighted indeed to decide that it can be used for cyclists and pedestrians, but not rapid transit, given the importance of providing public transport into the city.
59. The **third** alternative would be to eliminate the merge by initiating a peak-hour bus lane citybound on the entire length of the A20 dual-carriageway from Newtownards to Quarry Corner, meaning that traffic would remain in single file on this stretch and not have to merge at Quarry Corner. Roads Service may have their own views on the viability of such a proposal since it would also preclude overtaking slow vehicles such as tractors.
60. If none of these options are deemed appropriate, at the very least the merge should be controlled by traffic signals, ie

via a form of ramp metering. One possible arrangement is shown in the diagram, purely to illustrate the concept.

61. In this example, the two lanes of traffic would be divided by a painted "ghost island" on the approach, with two separate sets of lights, one for each lane. These lights would let vehicles through from each lane alternately, with sensors detecting when the road ahead is full. This would at least create a smoother, controlled merge that is likely to minimise possible congestion.



References

[1] National Physical Laboratory published an air quality assessment of Castlereagh Borough Council (report AS38), 2009, Table B.4. Measured at Quarry Corner.
[2] Ibid, Table B.6a.
[3] Statement by DRD on Greenisland Scheme in 2008
[4] Environmental Statement into the proposed dualling scheme at Greenisland, 2007