December 2021

Bristol Civic Society response to the 2021 Western Harbour 'Vision' consultation - road options

1 Introduction

Even though roads are outside the remit of the 2021 Western Harbour Harbour Hopes Visioning consultation, the Society's Transport and Place-making Group feels that it would be useful at this stage to summarize its assessment of the roads issues and options, as the road layout is an essential part of the next stage of masterplanning. This assessment builds on the Council's 2019 consultation on road options, and the associated Arup feasibility report.

2 Summary

- A 'decide and provide' approach might be taken to reduce road capacity here, but only as part of a holistic transport programme to support behaviour change. But changing travel behaviour and reducing traffic capacity in this location is particularly difficult: to some extent high-capacity roads seem a necessary evil of Bristol's topography which gives no realistic alternative of siting both the inner and outer ring-road here. All the options except Option 4, including Option 8, reduce the road capacity for strategic flows.
- The housing crisis is a strong driver for the Option 8 road layout. Keeping the existing bridge alignment and the raised highway would be acceptable to most people, but it delivers fewer new homes than other options. Other options return the roads to a more human scale, but the favoured Option 8 brings more traffic through Hotwells.
- More information is needed before we can make a definitive assessment of the road layout options, especially highway capacity based on traffic modelling. This ought to precede the masterplanning stage.

3 Overview of the 2019 consultation on road options

The Arup report looked at road layouts in terms of highway capacity, without considering wider place-making objectives, except for developable land. Arup assessed nine options for the roads, against a number of criteria, including cost and the amount of developable land freed up. The options included a tunnel, dismissed on cost grounds.

Arup refined the nine options to two for detailed scrutiny, and the Council consulted on these, plus a third which is a hybrid of the two. The options are:

- Option 2 (the Western option)
  twin 2-lane bridges west of Cumberland Basin
- Option 8 (the Eastern option)
  4-lane bridge on the alignment of the Merchants Road bridge, going through the Riverside Garden Centre site
- Hybrid option:
  northbound traffic follows the western route (with a single lane road and one bridge), southbound the eastern.

A consultation feedback report recorded the consultation responses to the options, but the Council has not yet publicly announced its preferred option, presumably because other factors need to be assessed first. We note however that option 8 came out top in Arup's overall scoring. It is second only to Option 2 in terms of land released, and is significantly cheaper (the third cheapest of the 9). And it can be foreseen that any proposal involving a bridge in the gorge (ie both the other two) would attract nationwide opposition.

[See the report here. Maps of all nine options are at Appendix A at pp 99-108.]

4 Retaining the Plimsoll bridge

In the Visioning consultation, it is reported that most people prefer the road option that keeps the existing Plimsoll bridge alignment, perhaps with a ramp or two removed. There is a certain irony to this: fifty years ago the same people would probably have voiced strong views against the road spaghetti that was newly proposed then, with its associated demolition of houses. Maybe the view now is partly due to the natural emotional response of resistance to change; but the logic is presumably that the western option harms the environment towards the gorge, and the eastern option harms the harbour environment, takes the A4-A370 traffic through the heart of Hotwells, and demolishes the Riverside centre.

Retaining the current Plimsoll bridge *was* considered in Option 4, whilst removing the gyratory layout in Hotwells, adding a northerly ramp, and removing the two eastern ramps. It is the cheapest option, but scored poorly on the amount of developable land released (a third less than Option 8), the quality of the setting for new development on both sides of the river, and the impact of the new ramp on the Rose of Denmark.

5 Future traffic levels and highway capacity

5.1 Overview

What future capacity should the roads be planned for ? There are a number of considerations here:

- the general tendency of traffic levels to increase due to a continual increase in the city's population. The 2019 Bristol Transport Strategy states that "For the city to maintain congestion at its current level with the planned growth …. [the percentage of] people commuting by car would need to reduce from 53% today to around 43% in 2036.
- the post-Covid trends to working from home, which has tended to flatten the daily flow peaks at commuting times
- other transport initiatives may reduce traffic levels. Increased use of Park and Rides and the new Portway station should have some effect. The Clean Air Zone will have a temporary effect.
- the acknowledged need to reduce drastically the use of cars and other road vehicles by 2030/2050.
- the option of consciously designing in less than current capacity.

5.2 What does the Arup report tell us ?

The Arup report distinguishes between traffic flows in/out of the city centre, and 'strategic' flows – those between the A4 Portway and the A3029 Brunel Way/A370. It takes the view that for the former there is scope for achieving modal shift towards more sustainable modes, but not for the latter. All the options except Option 4, including Option 8, reduce the road capacity for these strategic flows. So adopting for instance Option 8 implies greater traffic queues at peak times, to the extent that drivers do not modify their timing to avoid the peak hours. But it "would offer opportunities to develop a new city quarter with less impact resulting from highway infrastructure."

The report is a qualitative assessment of the impact on highway capacity, with no detailed highway modelling having been done. To make a more informed judgement on what highway capacity is acceptable, it would be necessary to model the impact of the options, using data on current traffic flows through the area, distinguishing between city centre traffic and strategic traffic flows. This ought to precede the masterplanning stage.

5.3 The scope for reducing capacity

In principle, we should be looking to reduce road space for motor traffic. Zero emission targets require a reduction in traffic. Western Harbour is a medium- to long-term project and the planning should reflect longer-term strategy.

On a traditional predict-and-provide transport planning basis, there is not enough in current wider transport plans to warrant reducing capacity. An alternative 'decide and provide' approach assumes that reduced capacity drives behaviour change to reduce traffic levels, as part of a holistic transport programme to support behaviour change.

The Council's and WECA's plans acknowledge the aim to reduce traffic, and their strategic corridors programme aims to free up road space to allow buses to be faster and more reliable to encourage more bus use, and they plan other measures to encourage a shift from private cars to more sustainable modes. But changing travel behaviour and reducing traffic capacity in this location is particularly difficult: the river crossing here forms both the inner and outer ring road.

6 The wider road network

It might be possible to design in lower road capacity at Western Harbour if an alternative road would take some of the traffic. But Bristol is constrained by its topography, notably the Avon Gorge, and this is not straightforward.

As far as we know there is no current discussion of an alternative road being built. The two possibilities are:

- a link from the A370 to the M5, possibly part of a new connection to Bristol Airport. There have been some discussions about this in past years, but there is nothing in current transport plans and the possibility seems to be aired no more.
- a bridge, possibly on a barrage, on the Avon near the M5 crossing. Business West's 2010 "High in Hope 2050" vision document proposed this, but there seems to have been no serious investigation of a bridge, and a barrage has been ruled out as a flooding measure in the recently approved flood strategy. In any event, whilst it would displace some north-south traffic, it is not clear whether it would reduce traffic at Western Harbour sufficiently on its own to justify building for lower capacity.

7 Other factors

Other factors are:

- the relative merits of a high-clearance bridge and one at low level. A high-level bridge was needed 50 years ago for passage of boats into and out of the harbour, but not now. There are differing views in the group on whether air pollution is more with traffic at a raised level. The raised roadway allows a relatively peaceful pedestrian experience at ground level.
- the limitation of a single bridge crossing across the Cumberland Basin, reducing network resilience
- one argument is that reducing the road layout to a more human scale would help to bring the Hotwells community together. But Option 8 goes along Merchants Road, which still divides the community and brings more traffic noise and pollution through it.
- a ground-level road layout and removal of the gyratory requires more traffic lights. This could add to congestion and worsen air quality. (Electric vehicles create particulate pollution from brakes and tyres, and all vehicles create particulate pollution from road dust. This is less well researched than NO2 pollution from exhausts, but is of increasing concern to scientists.)