

SOUTH COAST ALLIANCE FOR TRANSPORT AND THE ENVIRONMENT

Promoting 21st century sustainable transport solutions

Sophie Hartfield
A27 Arundel Project Manager
Regional Investment Programme
Highways England (South East)

Contact: Henri Brocklebank

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Dear Sophie,

A27 Arundel Bypass consultation

Thank you for your letter of 30 August. You are correct that SCATE (and many others) are disappointed that a near online WS2 option along the lines of the 'New Purple' (or Arundel Alternative as it has come to be known), supported by local residents, was not included in the options for the revised consultation.

However, we do not believe you are correct in the arguments you make for excluding the WS2 options.

Capacity

You used peak flow figures to show that a WS2 would not be economically or operationally justifiable.

As you have identified, Design Manual for Roads and Bridges (DMRB) TA46/97 table 2.1 points to an opening year Annual Average Daily Traffic (AADT) of up to 21,000 which you compared to the HE predicted flow for 2041 of 34,900. However, TA46/97 goes on to say that '*opening year flow ranges should only be used as starting points for the economic assessment of new roads*' and later '*all decisions on choice of carriageway standard should be based on the combined results of economic, operational and environmental assessments. The flow ranges given in Table 2.1 are determined only from the economic assessment*'.

'The operational assessment for each standard being locally assessed should include reference to Congestion Threshold (and hence Congestion Reference Flow) and Maintenance Considerations.' *'The threshold may be expressed in terms of annual average daily traffic (AADT) by identifying the likely ratio of peak to daily flow and applying this to the threshold hourly value. The resulting AADT is known as the Congestion Reference Flow (CRF).'*

Calculations and explanations of CRF including peak hour flow are attached, but they provide an **AADT of 42,814**. This is sufficient capacity to meet levels estimated in HE's 2041 traffic forecasts. However,

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we would challenge the reliability of forecasts on a 22 year timescale in any case. Transport for the South East (Economic Connectivity Report, 2018) and the Commission on Travel Demand (All Change, 2018) both highlighted high levels of uncertainty in predicting future travel patterns. HE staff appear unconcerned over this uncertainty, referring only to their use of DfT specified modelling tools.

Safety

You go on to discuss safety benefits of dual carriageways. Your first reference to a Road Safety Foundation report showing three times the rate of serious crashes on single carriageway A roads compared with A roads that are dualled can be discounted as this will include all types and ages of A road, whilst we are considering a new road. Your second reference makes comparison with modern dual carriageway roads with a hard strip which have very low rates of serious crashes. Whilst COBALT software may determine that a WS2 can exhibit twice the rate of a new dual carriageway, this would still be low and the new WS2 at Arundel would provide a major safety benefit above the existing road.

DMRB TA46/97 para 3.11 also goes on to say:

'Sustaining a particular carriageway standard along an entire route is not normally acceptable if this is at the expense of foregone economic or environmental benefits.' The seriously damaging environmental impact of all HE's proposed dual carriageway routes has been acknowledged on all sides. The economic case for all of these routes is highly questionable, especially with increased costs of revised option and their dependency on the condition that Worthing and Lyminster roads schemes are completed in order to realise estimated economic benefits at Arundel. These foregone benefits clearly point to the unacceptability of sustaining a dual carriageway standard at Arundel, particularly in the light of the evidence that a WS2 standard is a potentially viable alternative option.

Public Transport

Whilst we are in some agreement with your assertion, drawn from the PCF Stage 2 Multi-Modal Study, that problems on the A27 still need to be addressed (hence our support for a short WS2 scheme), your subsequent reference to other reports that 'no significant improvements are planned for Coastway [rail] services' seem to be out of date. Network Rail SE Region is currently running the West Sussex Connectivity CMSP looking at significant upgrades to the West Coastway line and faster and more frequent services between Havant and Brighton, along with improvements for the Arun Valley line. The Network Rail work addresses: local and long distance rail connectivity; wider transport connectivity with other modes including ways of reducing traffic congestion on key roads; accommodating future growth in peak time travel demand and housing growth. It is anticipated that the emerging programme will follow the current scheduled SE rail network improvements. The HE A27 sponsor, Peter Philips, has participated in this study, but does not appear to link A27 plans in any way with Network Rail's more forward thinking, integrated approach.

You also quote the Study as saying 'people travelling on foot will remain similar to current levels of approximately 10%'. This in contradiction to recent government targets to double cycling and significantly increase walking levels by 2026, particularly through its Cycling and Walking Investment Strategy. You will recall that Arundel has long sought a safe walking and cycling route to Ford station to provide non-car access and connected cycleways across the town. As a third of A27 traffic is local to Arundel and its environs, a shift to active travel that these measures would facilitate can impact on A27 vehicle numbers, particularly during peak times.

In the light of this, this year's updated NPPF and recent studies and guidance from bodies such as Transport for New Homes and the Chartered Institute of Highways and Transportation – and even

including SCATE's own Sussex Coast study - on shifting housing and business development planning to Transit Orientated Development and integrated land use, alongside national and local commitments to carbon reduction, it is not unreasonable to expect modal shift away from cars.

Greenhouse gas emissions

Following new legal obligations to meet net zero carbon target for 2050, it would normally be expected that a greenhouse gas reduction plan would accompany any major government project. The HE Environmental Assessment Report makes clear its expectation that greenhouse gas emissions will increase with the implementation of each of the proposed Arundel dual carriageway options.

Whilst HE may not have targets or otherwise any interest in developing projects which will result in significantly reduced operational emissions, we are of the view that it will be necessary for it to do so if transport emissions are to be reduced for the UK to meet legally binding targets. We would also argue that any authority with a sense of responsibility and foresight would demand this now and regard the more modest Arundel Alternative WS2 scheme, along with improved local bus and active travel infrastructure connecting with improved rail services, as a likely opportunity to move in that direction.

Overall, we are disappointed that Highways England appears not to have seriously considered options other than a dual carriageway or its wider public responsibilities. We would appreciate a fuller and more detailed response on the issues raised above so we can understand how Highways England has addressed these issues.

I look forward to your response.

Sincerely,

Henri Brocklebank
Chair SCATE

Appendix

Calculating Congestion Reference Flow (CRF) for A27 at Arundel

DMRB TA46/97 Annex D provides factors related to carriageway types and tells us that for all other figures '*local values should always be used*', ie typical values are not appropriate.

It provides a formula for CRF as

$$= \text{CAPACITY} * \text{NL} * \text{Wf} * 100/\text{PkF} * 100/\text{PkD} * \text{AADT}/\text{AAWT}$$

NL is number of lanes in each direction

Wf is carriageway width factor. For the WS2 with 2 x 5m lanes

$$= (0.171 * 10) - 0.25 = 1.46$$

Using HE's Webtris figures from 2015-2016 (HE's baseline year was 2015):

PkF is percentage of total daily flow in peak hour = 8.2

PkD is percentage of highest directional flow in peak hour = 52.6

AADT is annual average daily traffic = 31424

AAWT is annual average weekday traffic = 32403

For a single carriageway:

where CAPACITY is peak hourly flow:

$$= A - (B * \text{Pk}\%H)$$

where A and B are provided single carriageway factors

Pk%H is the percentage of HGVs at peak hours

Evaluation of HGVs was estimated by residents locally from available HE TMU counter data and separate traffic census data, including vehicle length, along with direct observation at 5.5%. This relatively low value is consistent with common practice of HGVs avoiding peak traffic.

This provides a peak hour capacity value

$$= 1380 - (15 * 5.5)$$

$$= 1,304.25$$

This is lower than your own calculation of 1320, suggesting that local residents may have been conservative in their estimation. Since neither you nor (as far as we can see) the 2018 SAR provide a peak hour HGV percentage figure, the remaining calculation uses the residents' conservative value for the peak hourly capacity.

So the **CRF AADT**

$$= 1304.25 * 1 * 1.46 * (100/8.2) * (100/52.6) * (31424/32403)$$

$$= \mathbf{42,814}$$

The importance of using local data for calculating flows at Arundel is clear. It appears that traffic levels at Arundel do not exhibit typical behaviour, but show lower morning and evening peaks, but slightly higher levels during the intervening part of the day, ie a more even daily spread of traffic, than is typical at larger conurbations. This means that capacity can be provided by a smaller road than might otherwise be expected as it does not need to accommodate larger peaks.