Teddington and Alstone Villages and the A46

Assessment by Gerald Kells

For the Teddington and Alstone A46 Advisory Group

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1. Introduction

My name is Gerald Kells. I am a Campaign and Policy Advisor with a particular interest in Transport, Housing and Strategic Development. In October 2019 I provided a detailed assessment for the Teddington and Alstone A46 Advisory Group (TAAG)[1] on proposals for a new or upgraded A46 link from M5 junction 9 past Ashchurch, and for additional proposed improvements past Beckford, including options relating to the Teddington Hands Roundabout, based on the currently available material.

This followed a site visit to Ashchurch on 27 March 2019 as part of previous work, which included travelling the relevant sections of the A46 and the various roads around Ashchurch, as well as visiting the railway station.

Of particular concern to TAAG was the impact future road proposals might have on Teddington, Alstone and the local environment and how these could be avoided, reduced or mitigated.

Fig 1. A46 through Ashchurch to Beckford

TAAG set out their concerns in an initial report in July 2018. They were particularly concerned that:

[1] http://taagroup.co.uk/

- any bridging work which allowed separation of local traffic from through traffic would heighten noise and pollution concerns and introduce additional concerns of negative visual impact and light pollution.

- dualling of the A46 south of Little Beckford, linked to a new by-pass to the south of the current Teddington Hands Roundabout, would have a significant detrimental impact on Teddington and Alstone.

- there could be a detrimental impact from flooding south of the Teddington Hands Junction, severance of the existing garage, stores and public house at the Teddington Hands Junction, as well as adverse impacts on the Cotswold Area of Outstanding Natural Beauty (AONB), which is close to the villages.

- new road infrastructure could lead to secondary developments which would directly encroach on their villages and ultimately erode its character. In this regard they were particularly worried about piecemeal development.

In my 2019 report I recommended that TAAG should:

a. raise concerns about the sustainability credentials of the Ashchurch Masterplan.

b. oppose the Midlands Connect and Western Gateway concept of an A46 Expressway and instead seek holistic solutions to the A46 issues in Ashchurch.

c. criticise the lack of clear public transport improvements proposed for Ashchurch.

d. argue for all alternative options to addressing the issues on the A46 to be considered, and that any road improvements should be carefully targeted at specific, local problems.

e. promote options which either utilise or remodel the current Teddington Hands Junction.

f. argue against prioritisation of improvements beyond the Teddington Hands Junction or for the need for an Expressway to Evesham.

g. seek clarity on how any proposals will be progressed, potentially by Midlands Connect, Western Gateway, Highways England and Gloucestershire County Council

h. seek further expert help to clarify the environmental and landscape impacts.

i. coordinate where possible with relevant sympathetic bodies such as the Campaign to Protect Rural England (CPRE) and the Cotswold AONB Board.

j. ensure that local councillors, MP, the community and media are aware of their concerns.

I stressed that, my own analysis did allow that some additional highway capacity may be required to resolve problems in Ashchurch. However, I did not consider that the level of intervention proposed by Midlands Connect, (that is to say a dual carriageway Expressway with Grade Separated Junctions specifically aimed to redirect additional traffic from the Midlands Motorway Box,) was likely to be needed. It could, in fact, generate its own traffic problems.

Since then, TAAG (and CPRE Gloucestershire) have obtained, through Freedom of Information, the Route Strategy Options Assessment of the A46 (from the M5 to the M40 (2017). They have also acquired the Options Assessment Report and Outline Business Case for a scheme to bypass the A46 from the M5 to the Teddington Hands Junction developed by Highways England in 2018. Those documents were not available to me at the time of my report.

Those documents refer to earlier Highways England work, notably:

- The A46 (Ashchurch) Scoping Report (CH2M)
- A46 Corridor Study (M5 J9 to M6 J2) Baseline Assessment Report (Highways England, 2015):
- A46 Ashchurch Optioneering Report (JMP)

It may be useful to also seek these through Freedom of Information, along with asking for the Annual Average Daily traffic (AADT) outputs for the A46 and A435 for each of the three options.

As well as helping to understand the impact on Teddington this may give details of other options. A long list of options is specifically referred to in the Highways England Route Strategy Options Report from the M5-M40 but it covers a wider Geography.

Following that work Highways England did not, however, pursue a scheme through the Route Investment Strategy 2 (RIS2) but Gloucestershire County Council are promoting a Local Large Major (LLM) Scheme although the line of that has not been made public. Consultation on that scheme has been delayed but because of the deadline for LLM schemes, a consultation is anticipated by TAAG in the Summer of 2021.

An alternative proposal by Councillor Vernon Smith for a route from Junction 10 of the M5 has also, we understand, been modelled. However, that would need to cross land which is safeguarded in the current Gloucester, Cheltenham and Tewkesbury Core Strategy[2] for strategic development. Moreover, a consultation on improvements to Junction 10 by Gloucestershire County Council was issued in June 2021 aimed at supporting strategic development at that location.

[2] Appendix 1 - JCS Adoption Version November 2017.pdf (gloucester.gov.uk)

I also, separately, obtained, through Freedom of Information Requests, a series of documents related to the Midlands Connect wider A46 Study work. I completed a report on that for CPRE West Midlands (attached) which sheds doubt on the long-distance role of the A46 the corridor. That material also confirmed the relatively local nature of most traffic movements on the A46 as well as the limited impact any improvements were likely to have on the Midlands Motorway Box, because of the limited number of through movements on the box and the relatively low potential time gain of using the A46.

A further change since my previous report has been the granting of planning permission for housing on Land at Fiddington, South of Ashchurch (up to 850 dwellings) and a further proposal for Land to The North West of Fiddington (up to 460 dwellings) [3]. In effect, these remove options similar to that proposed by the Department for Transport in 1993 for a dumb-bell island at Jn 9 of the M5 leading to a bypass.

The southerly end of the development would be to the north of all the current Highways England Options: 1, 2 and 3.

Lastly, in August 2020 TAAG submitted comments to Gloucestershire County Council. They raised two key areas of concern.

Comment 1: The location of the new road as this approaches the Teddington Hands roundabout.

Comment 2: The road classification in the context of local policies and strategy.

2. Highways England Proposals

TAAG have now asked me to consider the options proposed by Highways England and comment in broad terms on key issues which may be relevant to a future consultation while acknowledging that the proposals put forward by Gloucestershire County Council may be different and will require more detailed assessment.

I have not considered (as in my earlier report) options beyond Teddington Hands towards Beckford where my earlier comments would still stand.

2a. Route strategies: Option Assessment Report A46: M5-M40

This report claims to follow on from the A46 Ashchurch Optioneering Report (Highways England, 2016) in which seven corridors and nine junctions were identified from a long list.

It refers to a number of key constraints that informed the route selection including the existing traffic conditions within Ashchurch, engineering challenges such as

[3] 17/00520/OUT and 21/00451/OUT

existing structures/infrastructure, topography and flood plains, sustainability issues such as location of communities and areas with environmental designations and future development. The preferred option presented was a southern bypass with a new junction to the south of the M5 J9.

The key objectives of this study, it says, included:

- to address existing capacity issues on the A46 trunk road within Ashchurch and at the M5 Junction 9 (M5, J9)
- to support development within Ashchurch, Evesham, and further afield, through providing improved infrastructure
- to improve the strategic function of the A46 through improved and more consistent journey times
- to provide a substantive strategic traffic alternative to use of the Birmingham Motorway Box (M5/M42/M6) route.

I consider the last bullet point in some detail in my 2020 report for CPRE when looking at the A46 Initial Study Report and it is worth considering that issue in more detail here.

Highway England's considered improvements to the section from Ashchurch to Stratford as part of their Motorway Hub analysis[4] and suggested:

Some worsening of delays is forecast between the M40 and M1 due to increased traffic (up 100-300 [Passenger Car Units] PCUs/hour between the M40 and M6). Also, traffic is expected to increase on the M50 as the route from south Wales becomes more attractive (up to 13%, or 250 PCUs/hour during the average peak hour).[5]

The A46 Study Initial Report (by Midlands Connect) examined the comparative time taken to use alternative long-distance motorway routes, firstly, from Tewkesbury to the M1 near Coventry (junction 21) using the M5/M42 and M6. The time taken is similar but, according to the report, businesses use the motorways because they are more reliable.[6]

(These are, of course, artificial constructs, since the majority of travellers are not making such journeys. There is clearly some relevance in these journey times for long distance vehicles, particularly freight.)

[4] From: Long Term Midlands Motorway Hub Study Enhanced Strategic Case, Preferred Package, (Undated)
[5] Passenger Car Unit. A measure used in traffic modelling to define vehicles in terms of the capacity they require. In the Midlands Regional Traffic Model, a car or light goods vehicle is equivalent to 1 PCU, and HGVs 2.5 PCUs
[6] A46 Corridor Study Initial Report, Fig 3-10 -3-11 and Tables 3-1 -3.3.

Table 3-1: Journey times comparison M5 J9 to M1 J21, typical Friday

Route	Morning peak journey time (mins)	Inter-peak journey time (mins)
Via M5/M42/M6	90	87
Via A46/A45	90	80

Source: Google

Fig 2 From A46 Corridor Study Initial Report

Figure 3-10: Journey times comparison M5 J9 to M1 J21, typical Friday

Fig 3 From A46 Corridor Study Initial Report

But the more important question is whether moving that traffic onto the A46 is the best way to resolve congestion issues on those routes, even if it could. We know the level of benefit to other routes is limited because Highways England's own Motorway Hub Study gave specific outputs:

improve performance of the Hub for all traffic by removing some traffic (delays are forecast to fall on the M42 by 40-50 vehicle hours per hour between the M5 and J3A and by over one minute between J3A and J7; improve performance of the M5 for all traffic (traffic flow is forecast to reduce by 5-10% or c. 400 PCUs/hour, with a resultant 20-30% reduction in delays and 5% reduction in journey time between J10 and J4A)[7]

The modelled difference on the M42 would not appear significant and the benefit to the M5, while more significant, may well be eroded by generated traffic. Indeed, the fact that '*less than 10% of total trips, use the A46 in preference to the M5/M42/M6 alternative'* should not startle us given that the number of through trips on the motorway box is probably less than 20% in peak times.[8]

[7] From: Long Term Midlands Motorway Hub Study Enhanced Strategic Case, Preferred Package, (Undated), Page 25.
[8] A46 Corridor Study Initial Report, Page 26

It seems to me that the benefits to the Motorway Box are likely to be limited and that the potential demands on the Motorway Box would almost certainly mean any gains were lost. Moreover, as we will see later on there is a risk that safety would diminish as Motorways are generally the safest roads.

In other words, I do not consider the case for the A46 as an alternative to the Motorway Box is strong, even though it is often repeated.

Notwithstanding that, the A46 Option Assessment Report includes two relevant Options, one for improving Junction 9 and the route from Junction 9 to Teddington Hands Roundabout (Reference: Mid 16_01[9]), and (Reference: Mid 16_15) A46 Offline Improvement from the M5 J9 to Teddington Hands Roundabout which, they say, would become necessary prior to 2026 even if it is assumed that a significant online improvement was already in place.

The subsequent Options Assessment Report for Ashchurch, which I consider below, directly quotes those two Options. However, the three detailer Options it proposes cannot be considered compatible with them. None include improvements to Junction 9 or the existing route, nor do they link to Junction 9, (even though it was still possible to do that when the Options Assessment Report was written as it predates the Fiddington Planning Consent.)

Instead, the Ashchurch Report identifies three routes, two from a new junction on the M5 and one from Junction 10.

2b. Ashchurch M5-Teddington Hands Options Assessment

Chapter 1-3 of the Options Assessment largely sets out the then current policy position.

Chapter 4 of the Options Assessment considers in more detail the case for intervention.

Para 4.10 summarises the results. As these do not differ substantially from the evidence previously given, I have not analysed these in detail but identified a few key points.

According to the Options Assessment the A46 is near capacity between M5 Junction 9 and Aston Cross, with a stress factor of 0.94 in the eastbound direction, and 0.89 in the westbound direction (based on the Congestion reference Flow) which is likely to cause congestion during peak periods, something which is evident on the ground.

I checked the relevant traffic count points and there has been a small increase in traffic at all points on the A46 in 2019 although it went down in 2020, (something which I have discounted because of the impact of the COVID Pandemic.) It is hard to be certain what will happen to future traffic growth.

[9] See Table 5.1, M5-M40 Options Assessment Report

The diagram below includes the Count Point from my previous report as well as the Count Point (37191) on the A435 South of the B4079. In terms of the Highways England Options the A435 Count Point would be South of both Option 1 and 2. Some traffic might leave on the B4079 but there is no alternative count point between there and the Teddington Hands Roundabout. It can be seen that the traffic levels on the A435 are currently lower than the A46 Count Points, although that would be altered on the section between the B4079 and the A435 by all the Highways England Road options.

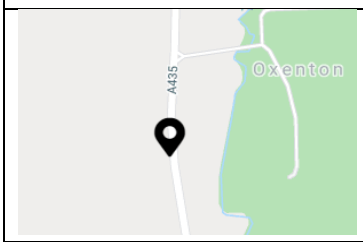
Location (More detail and other years on website)	A46 Count Point 2019 (2018 in brackets)[10]	All Vehicles (2-way AADT)	LGV	HGV
	37191 (A435 south of Oxenton)	13947 (13918)	1826 (1832)	505 (503)
	17100 (Into Tewkesbury)	17109 (16943)	2446 (2467)	746 (744)
	90334* (Ashchurch) (99320 - 2017)	20013 (19899) (20375)	2983 (2994) (3256)	1264 (1267) (1864)
	73531 (Teddington Hands)	18763 (17945)	2465 (2381)	(1433) 1382
	99321 (After Beckford Road)	18763 (17945)	2465 (2381)	(1433) 1382

Fig 4. Count Point Traffic on A46 and A435

[10] http://www.dft.gov.uk/traffic-counts/area/regions/South+West/local-authorities/Gloucestershire

I also looked at Crashmap to confirm the up-to-date situation on Accidents. The report refers to a number of 'clusters', including at the Teddington Hands Roundabout. I noted a further fatal accident, since the data in the Options Report was extracted, on the A435 just south of the Roundabout. This forms part of a cluster which includes two further serious accidents at the entrance to the Truck Stop. A fatality further down the A435 is also relevant in my view.

Chapter 5 makes future projections of traffic growth using the Joint Core Strategy (JCS) Model although it is admitted that more detailed work would be required for a scheme with more detailed modelling. It also relies on national traffic growth figures which (as I said in my previous report) have historically not been met.

Moreover, the constraints the report itself identifies may hinder those traffic growth levels. Nevertheless, there is substantial growth proposed at Ashchurch itself.

In Chapter 7 a series of objectives are identified. That is to say:

- To support economic growth within the study area and wider A46 corridor;
- To provide a safe network at M5 Junction 9 (including slip roads) and along the A46;
- To improve the flow of traffic on the A46 corridor to enable reliable journey times and reduce congestion;
- To enhance the resilience of the M5/M6/M42 corridor; and
- To reduce severance and improve integration for non-motorised users within Ashchurch.

Chapter 8 identifies three options.

I note that none of these options reaches Teddington Hands Roundabout. All of them decant traffic onto the A435. There is no proposal for any upgrade of the intervening A435 or any improvements to the Teddington Hands Roundabout. The Options are all South of both the Fiddington permission and the Masterplan for housing at Ashchurch.

Unfortunately, neither the Options Assessment nor the subsequent business case include the traffic modelling outputs, only the overall time savings. This means that some of those time savings may be minor but accumulate a large monetary value as a whole. Moreover, the lack of traffic data does not allow for any analysis of the traffic reduction that would occur on the A46 or the increases in traffic on the A435 or on the B4079 (or elsewhere).

None of the Options include any new junctions into the South of Ashchurch Development Area, although this is something that might be included in a more local scheme.

Figure 20: Location of proposed scheme options

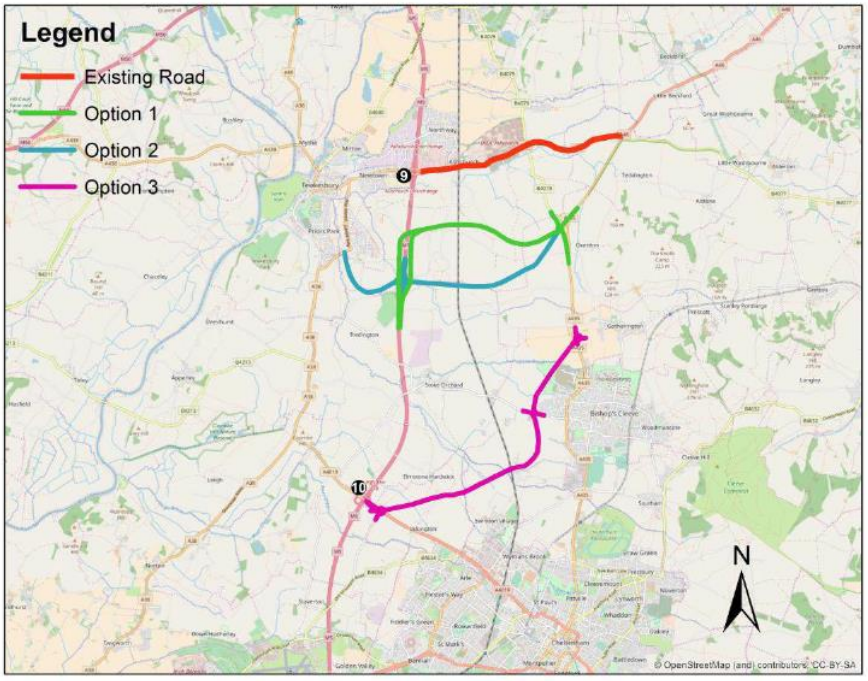


Fig 5. Options from Highways England A46 M5-Teddington Hands Options Assessment

I also note that while Option 1 would simply draw traffic from the M5 onto a new single carriageway road, Option 2 would be a dual carriageway and include a link road to Tewkesbury, thus creating a new link that would attract traffic between the two centres. It would also include the removal of the slip road on Junction 9 so that all traffic from the M5 accessing Ashchurch would need to leave at the new junction.

I am assuming that one reason for modelling Option 2 is that it avoids an additional junction on the M5, something I would assume Highways England would wish to avoid.

Option 3 does not change Junction 9 but creates a new link from Junction 10. This would only be likely to be attractive to longer distance travellers and so would be less likely in my view to alleviate congestion on the A46 in Ashchurch.

All three options would increase traffic on the A435. I would assume that Option 2 would have the largest impact but there is currently no published traffic output data, something that should be requested via Freedom of Information.

The other noticeable thing is that the accidents projections suggest that all options will increase accidents, largely because they transfer traffic from the relatively safe motorway environment to more local roads. This is particularly concerning as they are transferring traffic onto the A435 which, as stated above, has a cluster of accidents on the section where the new roads would increase traffic.

Despite the obvious attraction of Option 2 to Highways England it does not fare as well as Option 1 in terms of time savings or in terms of Cost-Benefit, having a value well below 1. Option 1 only reaches a benefit 1.13. Option 3 fares worst of all. In

other words, none are considered to represent good value for money, The best, Option 1 is rated as low value for money.

3. Next Steps

As stated above the Highways England proposals may not be the same as the proposals put forwards by Gloucestershire County Council. It is also likely that there will be resistance from Highways England to an additional junction on the M5. That being said the Cost Benefit Analysis (COBA) results favour that approach rather than closing Junction 9.

I do not consider the Option of a route from Junction 10 is likely to be cost effective and a route from the existing Junction 9 is no longer feasible because of development. So, some form of new junction seems likely.

From TAAGs point of view the closure of the slips at Junction 9 would probably be the worst option because, as well as through traffic, any traffic entering Ashchurch from the M5 would need to use the A435.

Without seeing the traffic data, it is not clear whether the raise in traffic on the A435 would be beyond the Congestion Reference Flow, (approximately 22,000-23,000 Average Annual Daily Traffic (AADT)) but it would certainly be above the opening width recommended in the Design Manual for Roads and Bridges for new roads[11] (although this does not necessarily mean existing roads need to be widened to those standards.) The table in Fig 13 from DRMB TA46/97 sets out recommended opening year economic flow ranges.

Carriageway Standard	Opening Year AADT	
	Minimum	Maximum
S2	Up to 13,000	
WS2	6,000	21,000
D2AP	11,000	39,000
D3AP	23,000	54,000
D2M	Up to 41,000	
D3M	25,000	67,000
D4M	52,000	90,000

Fig 6. From DRMB TA46/97

[11] http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol5/section1/ta4697.pdf

While the A435 is an existing road it would, in effect, have its role changed to function in a different way and the impact of this would need to be tested.

The problems are only underlined by the poor accident record and the cluster of accidents on the A435 approaching Teddington Hands Island.

It seems to me that any scheme which relies on traffic using the A435 and Teddington Hands Roundabout continuing to function as they do, would be detrimental to TAAGs goals, particularly if it is linked to the closure of Junction 9 of the M5.

And as I said in my previous report a new southern road which linked into the A435, would bring the route closer to Teddington and could lead to development filling up beyond Pamington which would be undesirable.

Any road would need to link into Ashchurch and the wider network so I still think at least one junction going North into Ashchurch from the road would be required.

Retaining Junction 9 and constructing a direct single-carriageway link into an upgraded Teddington Hands Junction would, in my view, meet TAAG's objectives best, although an alternative would be to locate a junction just north of Teddington Hands. However, the latter could involve elevated sections of road which would increase the impact of the road, particularly on the landscape. It would seem feasible for a new link to utilise part of the current A46 alignment between Ashchurch and the junction with the following benefits:

- Utilising the existing junction at Teddington Hands could avoid a new road closer to the AONB and Teddington and Alstone villages. It could also avoid severance between the villages and the Teddington Hands Store, Garage and Pub and ensure that HGVs accessing the Truck Stop continued to use the existing route and not come from the south turning north onto the A435.

- A new road could join the A46 between Ashchurch the Teddington Hands Junction but, if it was deemed necessary to keep the current A46 separate from the new road, the current road could potentially be diverted and run as a local road next to the bypass, with both utilising the existing corridor. Either option would need detailed design consideration. There is already some highway land available although it might need further land-take to accommodate both.

- A new road could then lead into either a modified Teddington Hands Junction or a replacement junction immediately adjacent, although a new junction, if it was elevated, would be likely to be more intrusive.

- This approach would link into the current A46 continuing towards Evesham rather than pre-empting a road south of the A46 beyond Teddington Hands which would further impact on Teddington (and potentially the AONB)

This would, of course, require further traffic and COBA testing.

4. Recommendations

It is difficult to make specific recommendations in terms of the approach TAAG should take to a future scheme without knowing the nature of that scheme, including junctions, carriageways, what happens to Junction 9 and whether the scheme includes improvements as far as the Teddington Hands Roundabout.

However, I would advise TAAG to pursue the Freedom of Information data on traffic from Highways England now as it may take some time to retrieve and may not arrives before the consultation is opened by Gloucestershire County Council.

Key issues about the proposals will be:

- Is it a single or dual carriageway?
- Does it include the closure of Junction 9?
- Does it go to the Teddington Hands Roundabout or involve upgrading the Roundabout?
- Does it rely on traffic using the A435 and B4079?
- Does it provide alternative access to Ashchurch without utilising the B4079?

TAAG will need to pay particular attention to

- The impact on traffic levels on the A435 and B4079.
- The safety implications for the A435 and B4079.
- The amenity impact on residents and businesses along the A435.
- The impact of the scheme on any future widening of the A46 beyond Teddington Hands.