

26 August 2020

Keep Our Meadow Green  
Residents Committee

Philip Murphy,  
Civic Centre, Glebe Street,  
Stoke-on-Trent, ST4 1HH

**Re planning application 65439/VAR - Meadow Lane  
Response to AECOM Design Team and Knights**

Dear Mr Murphy,

Firstly could I bring to your attention that the developers have, throughout the application sought to treat the proposed changes to the junction as simply a mitigation of an off-site junction rather than the actual fact; that the junction is the sole site access point by any means other than boat. The only way vehicles and pedestrians can access the site from any highway or footpath is via the Meadow Lane/Longton Road junction and this sets the bar far higher in terms of providing safe and suitable access for all users and therefore matters regarding safety are of the utmost importance (paragraph 108 of the NPPF).

I would like to confirm a point made by Mr Corinaldi-Knott in his letter of 20th August. Neither the Inspector nor we are qualified highways professionals, nor I would add are we legal or planning professionals. Albeit not being qualified in highways engineering, the Inspector took the appellant's stories at face value, relying on the integrity of the appellant's "experts".

However using our abilities to read and do mathematics to gain a working understanding of the common-sense engineering methodologies and principles related to this planning application we have found the appellants stories to be misleading. One does not need to be an aeronautics engineer to understand that the faster moving air on the top of an aircraft wing has less pressure than the air beneath and therefore the wing will be lifted into the air!

**AECOM Designers Response**

The "reasoning" provided by the AECOM Design Team for disagreeing with the RSA problem and recommendation is completely inappropriate.

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1. There is no technical reason or rationale provided related to the technical safety matters raised in the Stage 2 RSA. Therefore it must be assumed that the AECOM Design Team agree that the problems are indeed real.

The Design Team state that they must do one of the following;

*"The design organisation shall, for each RSA problem and recommendation, do one of the following:*

- 1) *accept the RSA problem and recommendation made by the RSA team;*
- 2) *accept the RSA problem raised, but suggest an alternative solution, giving appropriate reasoning; or*
- 3) *disagree with the RSA problem and recommendation raised, giving appropriate reasoning for rejecting both."*

If they do not disagree that the problems identified by the AECOM Road Safety Team are as a matter of fact real and exist, then the only option available is (2), where they must suggest an alternative solution.

Rather than providing an alternative solution and rationale, the AECOM Design Team;

1. Rely on the opinion of an unqualified Inspector as superior to their own as justification to not implement the recommendations
2. Infer that the land at 243 Longton Road is not in the control of the developer.
3. They also show helpful diagrams of the borders of No2 Meadow Lane and No243 Longton Road/11 Meadow Lane as a reason they could not implement the recommendations in the RSA.

In point ii on page 4 of Knights letter of 20th August where they make an "important point", they state: "The appellant acquired the property adjacent to the junction.", contradicting the point made by the AECOM Design Team.

At the time of writing we can confirm that the developers have not approached the owners of the land at No 2 or No 11 Meadow Lane and it seems that they have not approached the owners ( assuming that the appellant and developer are different) of 243 Longton Road regarding the acquisition of a small part of the land to help to implement the RSA recommendations for safety at the junction, which we find unusual unless they have no intention to scope out the feasibility of implementing the safety recommendations.

We also repeat the fact that the concerns raised in the RSA stage 1 audit about cars turning right into Meadow Lane have also not been addressed.

## Capacity model

We are pleased that Knights have now confirmed beyond any doubt that the spurious story they gave to the Inspector at the appeal about the methodology used by iTransport upon which the appeal turned was **bogus**, and that they have now also confirmed why right turners are held up (the need for the DIA), and how their proposed junction geometry does absolutely nothing to mitigate this.

- (i) The observed maximum average flows at the Meadow Lane 'Give Way' are longer by two cars than the model predicts: the queue grows in the validated model from 1 car to 3 cars. Crucially, the 3 cars are made up of a combination of both left and right turners in equal proportions. Which means that the queue is formed of both left and right turners, with left turners (who only need to join the flow of traffic) held back waiting for the right turners (who have to fully cross the nearside carriageway in front of on-coming traffic, and then also get into far side carriageway (albeit the junction is staggered)). So the validated queue of 3 is largely a product of both right turners and left turners queuing together in single file. The delay for all left-turners present in the queue is largely determined by having to queue behind the right turners who will on average take much longer to exit Meadow Lane (as all of the future modelling results show). And that is because in

In our previous correspondence we have proven that the appellants excellent QC, (credit where it's due), convinced the Inspector to believe the appellants stories, although we now know that the material facts are quite different than those presented to the Inspector at the time.

We do not wish to repeat the facts covered in our prior correspondence, however in the simplest terms we feel we should help readers to understand just how preposterous the appellants story is.

Turning to Knights incredible confirmation of the methodology used by iTransport;

- We agree that the base model needs to replicate observed flows.
- Knights claim that;

As submitted by the Appellant, one always has to validate traffic model no matter how you then go on to look at the future scenario. You need to understand why the model does not replicate the observed flows. You can then create a base model which does replicate the observed flows. And in so doing that allows you to understand why the model of the existing situation may not be accurate. I-Transport discovered, through this iterative calibration of the 4-arm model, that it was the entry lane width of Meadow Lane which was having the greatest influence. At present the entry lane width is very wide at 3.9m. This generates capacity because the available road surface is wide. But what the model does not appreciate (because the model is fairly simple) is that all the cars still sit one behind another in the queue, despite the expanse of road surface. The calibration i-Transport did to create a validated model therefore revealed the difficulty.

This evidence was not presented at the Inquiry although it is now confirmed as the premise that the iTransport Model is based on. None of the appellants evidence submitted to the Inquiry had a 4-arm model to demonstrate evidence of any iterative calibration. The fact is that they did not provide ANY evidence of iterative calibration of the base model.

However we concede that iTransport prior to submitting their final proof of evidence to the Inquiry did work out that to calibrate a base 4-arm model that excludes the capacity influencing factors of the PFS, canal bridge and low gap acceptance for the right turners, Meadow Lane would need to be 2.85 meters wide, not the 3.93 meters it actually is. (APPENDIX 1 - iTransports 4 arm model)

The difficulty iTransport found calibrating the model to observations this way is due to the fact that the main capacity influencing factors lie to the right within Longton Road and are not within the geometry of Meadow Lane, they had to ludicrously model Meadow Lane approximately 28% narrower than it actually is.

To justify their corruption of the model, Knights also suggest that the Junctions 9 software can not model a basic priority junction such as Meadow Lane correctly. Junctions 9 is the Highways Engineering gold standard, based on substantial empirical evidence. iTransport submitted absolutely no evidence to the Inquiry to back their assertion that Junctions 9 software is inaccurate and unfit to correctly model a simple junction based on it's actual geometry.

Knights also claim that based on this dubious "evidence" which was not submitted to the Inquiry, that in iTransports iterative modelling, (which would have included various iterations of lane width and flow of traffic on Longton Road,) that it was the width of Meadow Lane that had the greatest influence on capacity. This is simply impossible using the correct geometry and probably why iTransport did not submit any evidence to support their assertions. Starting with a correctly validated base model ( including the actual geometry, not the 28% narrower fantasy) ;

If you iteratively increase the width of Meadow Lane by 20%, 50%, 100%, you will get improved capacity up to a certain point, but you can only ever have two lanes, so it makes little difference if Meadow Lane is 500% wider, vehicles are still blocked by traffic flow and other factors to the right on Longton Road.

On the other hand if you modelled a comparative decrease in flow on Longton Road by 20%, 50% etc, you get a substantial improvement on Meadow Lane capacity, to the point where vehicles are unconstrained exiting Meadow Lane. And this is the type of effect signalling the junction would have as it temporarily disrupts the flow. Exiting Meadow Lane would be a breeze!

You could however seek to unscrupulously cheat the model of the current junction with a fantasy width of 2.85m, thereby unrealistically decreasing the capacity of the junction along with Lane Width. Therefore modelling the future scenario with real geometry from this base will obviously and unrealistically predict a significant and unattainable increase in capacity. This is so farcical that even when you increase the 2.85m to 3.93, the current width, you'll get a substantial capacity improvement, but have actually done nothing, and this is the foolish position Knights advance!

In points 22 and 23 of the Appeal Decision the Inspector says;

23. Furthermore, if this omission was a fundamental error, as suggested, it seems likely that this would be reflected in modelling outputs that contained obvious anomalies. But in this case no such signs are apparent. Bearing in mind the matters set out above, including the shortness of the existing queues in Meadow Lane, and the nature of the proposed improvements, effectively doubling the junction's exit capacity, I see nothing in the appellants' modelling results that looks in any way surprising, or suggestive of hidden errors.
24. Clearly there is no guarantee that the traffic model will prove to be accurate in every respect, but to look for such a high degree of confidence would be unrealistic. In the circumstances of this case, for the reasons given, I find no reason to doubt that the method used, including the omission of the DIA, is appropriate and acceptable. I therefore consider that the modelling carried out by the appellants provides a reasonable basis on which to judge the appeal proposal's impact on the Meadow Lane junction.

However due to the appellant concealing their method and providing absolutely no evidence to back their claims, the Inspector was unaware that the foundation for the appellants modelling and capacity improvement assertions were based on their 4-arm model, discredited prior to the appeal. However we have attached the discredited iTransport 4-arm model as Appendix 1.

To be absolutely clear, Knights in their letter of 20th August have revealed new evidence that they should have presented at the Inquiry, but instead they cherry picked the model output and highly unusually and unprofessionally withheld

ALL of the backing evidence as to how the outputs were attained, so as to avoid scrutiny.

Due to the preposterous nature of the iTransport 4-arm model, iTransport had agreed not to rely on it to predict capacity at the Inquiry. Had the appellant submitted this evidence to the Inquiry, no Inspector, including Inspector Felgate would possibly believe that this four arm fantasy model in which Meadow Lane had sneakily been shrunk down to 2.85m provided a "reasonable basis on which to judge the appeal".

We agree with Knights point that left turners are not constrained and right turners are the cause of delay at the junction.

Knights ramblings go on to reflect the iTransport methodology that the Inspector took at face value and believed to be true, albeit now shown to not be based on sound highways engineering practice or TRLs guidance. Despite it being clear that the delays in the validated base model are caused by right turning vehicles held up at the give way line, and absolutely nothing iTransport propose in the mitigation improves this, iTransport choose to simply ignore this fact in their with development model and remove the DIA.

Knights make the irrational claim which the Inspector believed, that the validated model ignores the fact that left turners are held up behind right turners who are delayed turning right. This is complete rubbish. If all vehicles only turned left, there would be no need to add in a DIA to validate the model. The DIA accounts for the delays at the give-away line caused by right turners only, and as the mitigation does nothing to affect right turners then the same factors that cause their delay in the base model, are still present and must be accounted for.

We are unsure why Knights are throwing in red-herrings, like the reference to the 2015 data when this is not a matter of dispute, 2015, 2018 data were all accepted as valid by the appellant at various points, but it makes no difference what data is used, the future when correctly modelled according to best practice principles comes out with a LOS = F, which is completely unacceptable and unsafe for a single site access junction.

Regarding iTransport's correspondence with TRL, this is covered in our previous letter and despite the misdirection attempted by Knights, the facts remain that iTransport did not follow engineering best practice and solicited via deceitful

means responses from Mr Binning without disclosing material considerations that would have lead Mr Binning to a different conclusion.

Knights attempt to downplay the significance of the upheld complaint to PINS regarding the Inspectors understanding of the DIA, trying to dismiss it as a wording error, a typo, when the fact of the matter is covered in the emails from PINS where they confirm that the Inspector had no recollection that the DIA applied to the right lane only, and therefore he could not form a reasonable understanding of the issue on which to judge the appeal.

Worryingly and in our opinion unprofessionally given this is a matter of safety, Mr Corinaldi-Knott attempts to misdirect by citing only paragraph 109 of the NPPF (2019)

“Again, as set out at the Inquiry, in policy terms these two issues relate to the two tests in paragraph 109 of the NPPF (2019). These require the decision maker to prove a severe residual cumulative impact on the road network (“the capacity issue”); and an unacceptable impact on highway safety (“the safety issue”). The latter test does not require the decision maker to ask themselves “is there safe access?”.

He is completely ignoring paragraph 108, Paragraph 108 clearly states:

*In assessing sites that may be allocated for development in plans, or specific applications for development, **it should be ensured that:***

- a) *appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- b) **safe and suitable access to the site can be achieved for all users; and**
- c) *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.*

So, irrespective of whether you mitigate your impact in capacity terms, you MUST provide safe and suitable access to the site for all users, or you fail the test set out in paragraph 108.

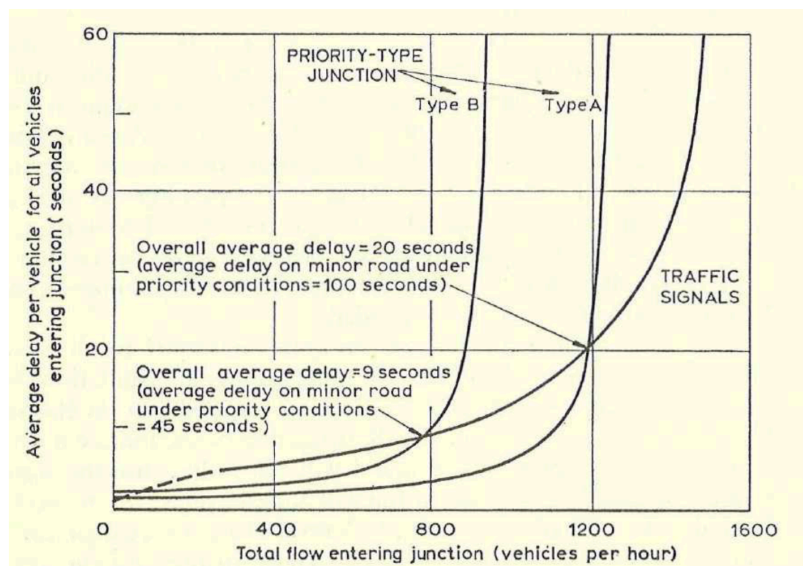
Finally on the modelling of the junction a fundamental point Knights are missing is;

They say:

- There are 370 dwellings on the Meadow Lane estate
- At present the maximum average observed queue is 3 cars.
- The new development will add 227 new dwellings.
- That is an increase in dwellings of 61%.
- On a pro rata basis, that will increase the maximum average queue to 4.8 cars.
- So on a pro rata basis we should have about 5 vehicles queuing at the junction.

This is utterly absurd, as they are assuming that the junction capacity relationship (and therefore queues and delays) always remains constant, irrespective of junction operation, which is simply not the case – it depends on the level of spare capacity in the junction in the first place – queues and delays increase exponentially as you approach saturation (i.e. reach the available capacity), simply because you reach breaking point, e.g. the point at which LOS becomes D, E and then F.

The extract below is taken from the ARUP Welsh Govt Local Model Validation Report, it clearly shows the relationship between delay and flow is not constant (either at priority or signalised junctions – in fact it applies at any type and size of junction)



**Figure 2.3: Typical Junction Flow / Delay Relationship Graph**

For queuing and journey time validation, it is relevant that the junctions in the study area are generally operating under congested conditions in the AM and PM peak periods. When a junction reaches 90-100% capacity, queues and delay grow exponentially, and hence validating to an exact queue length or journey time is not realistic. The diagram in Figure 2.3 (which is an extract from Webster and Cobbe, 'Traffic Signals', Road Research Technical Paper 56) shows the typical relationship between flows and delays at busy junctions. For example, the



diagram indicates that for a give-way junction at or near saturation, a 5% increase in traffic can engender a 200% increase in delay, and for a traffic signal junction, a 5% increase in traffic can result in a 50% increase in delay. Therefore, for validation of the relatively small network in this case, the approach to validating queues is based on achieving a good fit to the observed range of queue lengths i.e. 'short' queues of up to 20 vehicles, 'medium' queues of around 20-40 vehicles, or 'long' queues at around 50 (or over) vehicles.

We do appreciate Mr Coranaldi-Knott trying to explain the nub of our argument.

The nub of KOMGs argument is that the Inspector got his decision wrong because he did not accept/agree with their approach to traffic modelling and the use of a mathematical calculation that is irrelevant to what the Highway Authority is tasked with grappling with. If anything, the use of the 2015 traffic data for the KOMG model is the data that is wrong and the Council agreed that use of this data (after the 2018 traffic data was provided) would be inappropriate as the appeal progressed.

Mr Coranaldi-Knott misunderstands our point. Our point is not that the Inspector got his decision wrong. The "nub of our argument" is the fact that the Inspector was misled by the appellant, the Inspector took the appellants evidence on face value, which along with the clever wheezes of their QC convinced the Inspector to grant the appeal. With the material facts and withheld evidence now uncovered that the Inspector was clearly unaware of, it would simply not be possible for any other Inspector to reach the same conclusions.

In summary it is the goal of KOMG to do all that is possible, even helping the developer, to provide **"safe and suitable access to the site is achieved for all users"**.

It is rather telling that the developer has not seen fit to provide confirmatory junctions 9 model of the junction as this would, if it follows the engineering principles discussed in our correspondence end the matter in favour of the developer once and for all. If the developer is right, then AECOM ( the developers highways engineers ) can completely back the position of the developer. They only need to, inline with best practice and sound engineering judgement;

- Create a validated base model
  - Create a series of iterative sensitivity models to confirm the assertion that widening Meadow Lane has more effect on capacity than Longton Road flow.
  - Create a "with development" model with rationale consistent with AECOM's other best practice work.

- Explain why they think it acceptable that a junction with LOS=F is an acceptable fall-back.

With these points covered by AECOM, a reputable company, and the developer demonstrating that they have provided safe and suitable access to the site for all users, then we would be able to support the developer!

We are disappointed that the developer has not yet provided the above modelling, however I repeat our offer. If the developer can not afford to provide them then KOMG will raise funds to pay AECOM to do so. We would do this to ensure that the junction is safe for the local community and users of Longton Road.

If the developer chooses not to provide them, then it only goes to prove KOMG's points. We look forward to hearing from the developer to discuss their confirmatory Junctions 9 models.

In the absence of the requested Junctions 9 work from AECOM, there are now so many substantive new facts uncovered that have a material impact of the appeal decision, that no other Inspector could conclude the same, and so we urge the Council to look again the s278. We would strongly again urge the council to refuse this application and the previous fall back position on the basis of the judgment in the Powergen case. It is absurd and nonsense for Knights to say that the newly uncovered facts related to the stories put forward by the appellants at the appeal which are highlighted above, and in our previous submissions, are not "fresh objections sufficiently different from their earlier one". If the Council were taken to court by the developers, a judge looking at all of the freshly uncovered facts that have emerged since the appeal, could only come to the conclusion that the evidence now presented speaks for itself, and that the modelling of the junction is not safe and can not provide "safe and suitable access to the site for all users", and that the council therefore have the right in law to refuse the junction design application.

Keep Our Meadow Green Residents Committee