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## Technical Report

Project: **Newgate Lane, Fareham**  
Client: **Bargate Homes and Sustainable Land**  
Subject: **Rebuttal**

Prepared by: **Martha Hoskins** Date: **12/11/2020**  
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## **FL&BH 3.4**

### **Rebuttal by Miss Martha Hoskins**

#### **In Respect of**

**Outline Planning Application for Land at  
Newgate Lane (North), Fareham**

**and**

**Outline Planning Application for Land at  
Newgate Lane (South), Fareham**

**On Behalf of Fareham Land LP and Bargate Homes Limited (appointed by Pegasus Group)**

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**1. Background**

- 1.1. My name is Martha Hoskins. My role associated with this enquiry and my relevant qualifications and experience can be found in my Proof of Evidence FL&BH 3.1.
  
- 1.2. I confirm that the evidence which I have prepared identifies all facts which I regard as being relevant to the opinion that I have expressed and that the Inquiry's attention has been, or will be, drawn to any matter which would affect the validity of that opinion, irrespective of by whom I am instructed. I believe that the facts stated within this proof are true and that my opinions expressed are correct and in accordance with my professional skills and experience.

## 2. Introduction

- 2.1. The following rebuttal will address chapters 4, 5 and 6 in the Proof of Evidence (PoE) produced by Nick Gammer from HCC and chapters 2, 3 and 7 in the PoE produced by Jonathan Mundy from HCC. I will deal specifically with the issues raised below in 2.3. Issues raised on the accessibility of the site as advised in Gammer and Parker's PoEs are being dealt with my Mr Anthony Jones.
- 2.2. MR Gammar's PoE (NGPoE) primarily focuses on the impact of the development on capacity at the junction of Newgate Lane something which I believe we mitigate through the provision of a signalised junction. Mr Mundy's (JMPoE) addresses the LinSig modelling produced to assess the scheme and demonstrates that the signalised junction operates within capacity if the junction includes an indicative arrow. JMPoE expresses concerns regarding traffic giving way over two lanes of traffic. It is important to note that both PoEs discuss the provision of a fully signalised right turn; this is not an option that we are proposing at the junction as not only is it not appropriate for the number of right turners at the junction, but the junction would operate over capacity. The circumstances of this junction demonstrate that it does not require a fully signalised right turn; the junction would be over engineered, it is unnecessary. It remains my view that the provision of an indicative arrow is appropriate and compliant with national guidance at this location. We have not been provided with any official local guidance.
- 2.3. This rebuttal particularly addresses:
  - Provision of a Toucan crossing on Newgate Lane East south of the junction with Old Newgate Lane;
  - Traffic giving way over two lanes of traffic;
  - Merging traffic on the northbound exit of the junction; and
  - Capacity results at junction of Newgate Lane East and Old Newgate Lane.
- 2.4. This rebuttal will focus on the modelling of both developments and the total 190 dwellings. It assumes 100% private dwellings.

### 3. Assessment of the Toucan Crossing

- 3.1. It is my understanding that the provision of a Toucan crossing has previously been approved and agreed as part of the development. Due to the estimated low number of pedestrian flows and the corresponding low anticipated frequency in which it will be demanded, in the correspondence that I have seen, the impact of the Toucan crossing has never been raised as a concern by HCC.
- 3.2. In paragraphs 5.7 to 5.10 and 6.33 to 6.37 in NGPoE he highlights modelling undertaken of the Toucan crossing by HCC using 2018 flows which demonstrate that the crossing will result in queuing in the PM peak southbound back to the junction with Old Newgate Lane.
- 3.3. I do not accept the use of 2018 flows used in the model as all modelling assessments for the scheme have been undertaken using the 2024 approved flows provided by Pegasus Group. These flows have previously been agreed by HCC for assessing the appeal schemes.
- 3.4. The flows show much greater volumes in the 2018 PM peak than the 2024 assessment with 2692 PCUs being modelled in 2018 and 2011 PCUs in 2024. The 2024 flows take into account the introduction of the Stubbington Bypass which will relocate traffic away from Newgate Lane.
- 3.5. NGPoE implies that they assume every vehicle will be stopped both at the toucan and the junction and that the measured delay for both should be added together. The green time to traffic at both sites is so high that it is unlikely road users will be stopped twice. Due to the length of green time the northern junction gets and the infrequency the pedestrian crossing will be called there is very little time that Newgate Lane East will receive a red signal. In practice, the Toucan crossing and the junction could be linked, to ensure that traffic is not held twice.
- 3.6. As a result, it is not appropriate to rely upon the modelling in NGPoE of the Toucan, nor is it appropriate to quote 'add' delay at the Toucan to delay at the Old Newgate Lane junction.

#### 4. Traffic Giving Way Over Two Lanes

- 4.1. Paragraph 4.4 of JMPoE suggests that traffic giving way over two lanes presents an 'unacceptable safety hazard'. This type of junction is common-place across the country particularly whereby a separately signalled right turn would not be necessary. The speeds, volume of right turners and visibility at this site all significantly reduce the risk associated with the hazard.
- 4.2. Paragraphs 4.18 to 4.25 in JMPoE he states that in Hampshire it is not common practice to have traffic turning right over two or more lanes of opposing traffic. This is accepted, that there are very few of these types of installation in Hampshire however there is no written local guidance that we have been made aware of relating to this type of junction. As such, the proposal is in line with national guidance.
- 4.3. As no local design standards have been produced by HCC, national guidance has been used to inform the design of the junction. In JMPoE, national guidance appears to be dismissed as well as the evidence we previously provided including traffic flows and speeds (Table 5-1 of FL&BH 3.1). This demonstrates our understanding over the local context that Pegasus Group applied when developing the design of the junction.
- 4.4. Whilst seeking the views of peers in understandable, in my view, it is not suitable evidence to determine the safety of this junction. It is not best practice; industry standard practice is to review the pertinent guidance which has been done when developing the design. Site specific evidence has been obtained and we have carried out modelling. Pegasus Group commissioned an RSA raising one recommendation pertaining to local speeds which was responded to with a Designer's Response.
- 4.5. The indicative arrow design being proposed and junctions with traffic giving way over two lanes is common place across the country. Within Hampshire there are also junctions without signal controlled right turns giving way over two lanes.
- 4.6. At paragraph 2.5 JMPoE states that he does not believe any local context has been applied to the design of the junction. This is contrary to my view; a Road Safety Audit has been undertaken, site visits to view visibility, traffic surveys and speed assessments. All of these aforementioned undertakings demonstrate that there is no

reason to believe that the junction will be unsafe and take site specifics into consideration.

- 4.7. There is no reason to assume that the junction of Old Newgate Lane with Newgate Lane East will operate in the same way as the junctions noted in paragraph 4.9 of JMPoE. The following factors will all impact the likelihood of collisions:
  - The volume of right turners;
  - The volume of the opposing flow;
  - Visibility for right turners;
  - The availability of suitable gaps in which to cross; and
  - The design speed of the road and behaviour of road users.
- 4.8. The analysis of the collision data provided in Appendix C and paragraph 4.20 of JMPoE is Jonathan Mundy's interpretation of the traffic collisions. In my view without the raw data and traffic flows and speeds at the sites not all relevant evidence has been provided. Without this evidence it is not appropriate to compare the junctions in JMPoE with the proposed layout at Newgate Lane East and Old Newgate Lane. In advance of the appeal we have requested this data however it has to this date not been disclosed to us.
- 4.9. Paragraph 4.23 of JMPoE raises a variety of issues that could increase the likelihood of collisions at junctions where traffic gives way over two lanes. None of these issues will be present at the proposed junction of Newgate Lane East with Old Newgate Lane. There is not a high volume of right turners, there is no opposing right turn movement and the 85th percentile speed of oncoming speeds is less than 45mph.
- 4.10. In paragraph 4.24 of JMPoE the examples are not quantified so we cannot comment on whether they would behave in the same way as the junction Pegasus Group are proposing. For example, if the volume of right turners meant that they could not clear every cycle then they would behave aggressively however the proposed volume of right turners at this junction is very low, with an average of two to three turning in each cycle in the busiest hour of the day. If vehicles were not able to accept gaps in the traffic then there is sufficient time for them to clear in the intergreen in advance of the minor arm receiving a green single.

- 4.11. My PoE (Table 5-2 in FL&BH 3.1) demonstrates the number of vehicles anticipated to turn right each cycle. In the case of 190 dwellings this anticipated to be an average of 1.6 PCUs per cycle in the AM and 1.7 PCUs per cycle in the PM. It is highly unlikely that there will be instances where right turners are left exposed in the junction where they have not been able to clear in advance of the minor arm receiving a green signal.

## 5. Merging Traffic on the Northbound Exit of the Junction

- 5.1. In JMPoE chapter 5, analysis is provided on the distribution of traffic across two lanes when merging on the exit.
- 5.2. Examples are provided of locations in the area that HCC deem to be similar to the proposed junction at Newgate Lane East with Old Newgate Lane. Arguably none of the examples accurately represent a comparison to the proposed junction as the length of the merge in the proposal is at least 60 metres longer than any of the example junctions.
- 5.3. The junctions do not also appear comparable in terms of capacity. They show low volumes of traffic crossing the stop line per cycle with examples containing just 1 vehicle being counted in the results when evidently, they would output a result of 100%. At the proposed junction we would expect to see on average 55 vehicles per cycle crossing the stop line in the northbound direction.
- 5.4. The data in Appendix D of JMPoE does demonstrate that cycle by cycle the balance of traffic across both lanes varies from 100% to 50:50 hence we have provided results across a variety of vehicle splits and not solely 30:70 as both JMPoE and NGPoE claim. I believe we have undertaken a robust assessment and have acknowledged that the vehicle split will vary every cycle with road users seeking to achieve the lowest level of delay, particularly reducing it (by balancing across lanes) when the degree of saturation exceeds 90%.
- 5.5. Northbound traffic travels ahead in two lanes with the nearside lane being lane 1 and the offside being lane 2. Lane 1 shares the lane with left turning traffic and is also the flare lane. Lane 2 in my opinion would have the greater throughput travelling in the northbound direction. Our assessments of the indicative arrow assumed the greater volume of traffic in lane two however the results in Chapter 6 of this rebuttal demonstrate results across a variety of lane splits from 90:10 to 10:90.

## 6. Capacity Assessments of the Junction

- 6.1. Both JMPoE and NGPoE contain modelling results of a separately signalled right turn, I agree that in this layout the junction will operate over capacity. Pegasus Group and I are not proposing the fully signalised option at this junction. The layout of the junction, the 85th percentile speeds and volume the of right turners at the junction does not warrant a separately signalled right turn.
- 6.2. As such paragraphs 6.3 to 6.20 in NGPoE and paragraphs 5.15 to 5.23 in JMPoE are not engaged.
- 6.3. In Chapter 5 of this rebuttal I addressed the comments regarding the merging of traffic on the northbound exit of Newgate Lane East. Appendix D of JMPoE demonstrates that this will vary every cycle and it remains my opinion that traffic will alter their distribution across lanes in order to operate within capacity. As such the capacity assessments of the junction have been undertaken assuming a variety of vehicle splits across the lane. I do not believe that road users will behave in a distribution that would result in the approach operating over capacity; in essence it is in the road users' interest to balance on the approach to reduce their delay.
- 6.4. Results are presented below in figures 1 and 2 assuming a variety of vehicle splits for the AM. The PM results presented in my PoE show the junction operates well within capacity in the PM peak. The full results can be found in Appendix B of this rebuttal. Below I have demonstrated the practical reserve capacity (PRC) of the junction and the degree of saturation (DoS) for the northbound approach.

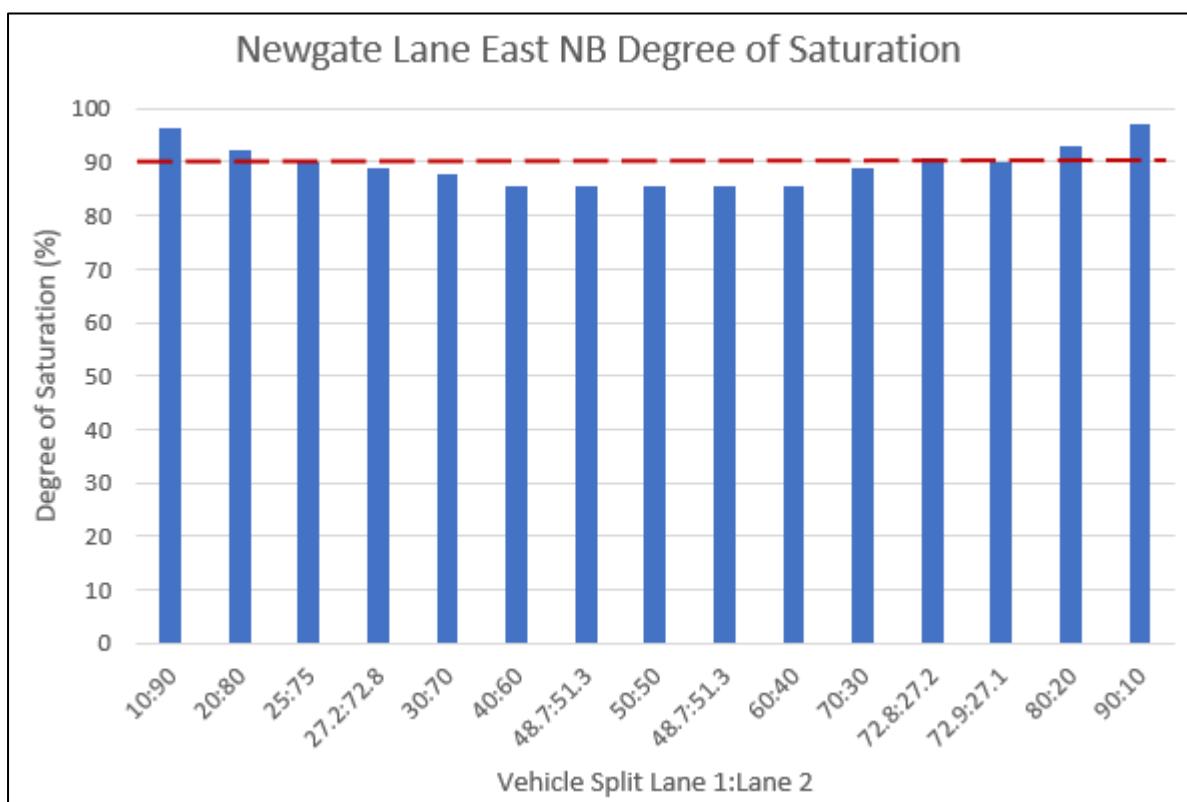


Figure 1 - Newgate Lane East Northbound AM Degree of Saturation Readings for 190 Dwellings

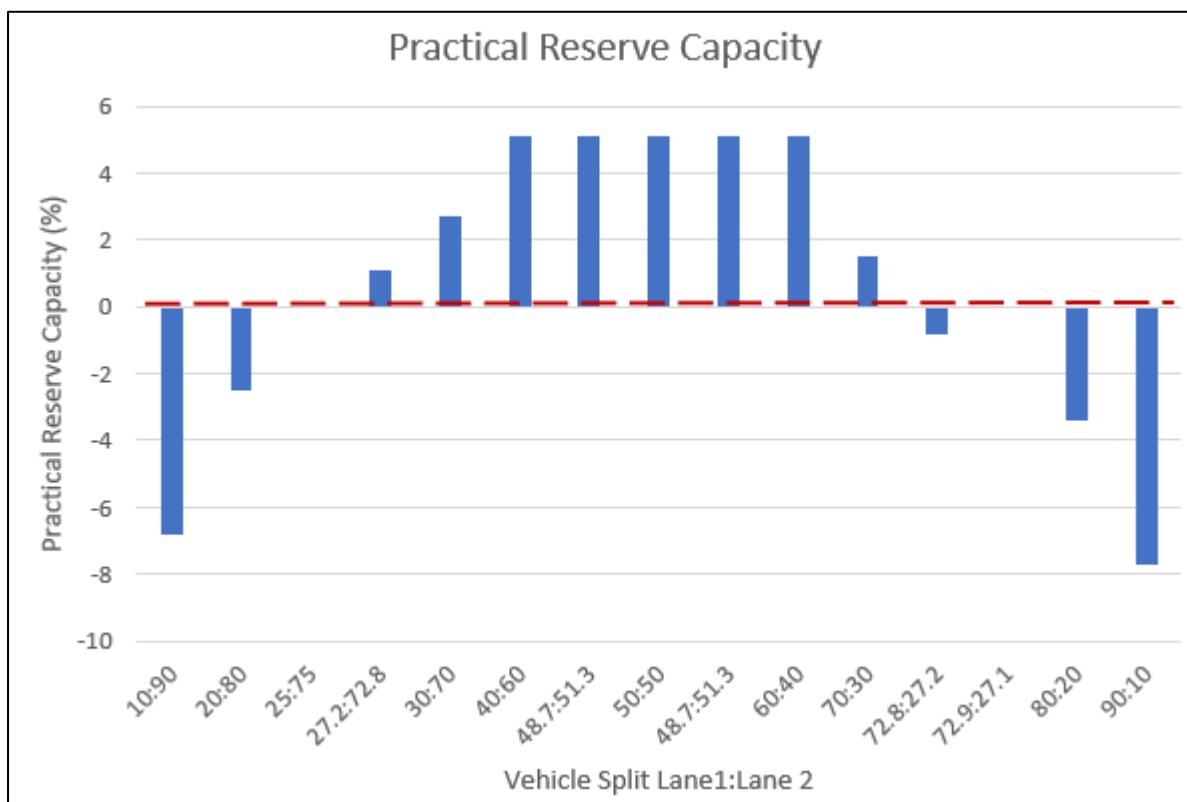


Figure 2 – AM PRC Results for 190 Dwellings

- 6.5. As previously mentioned, the modelling has been undertaken for a variety of vehicle splits across the two lanes. Between 10:90 and 50:50 the assessment assumes the effective flare is lane 1 or the nearside lane. Between 48.7:51.3 and 90:10 the effective flare is assumed to be lane 2, the offside lane.
- 6.6. 72.8:27.2 is the vehicle split suggested in JMPoE and as such has been modelled for 27.2:72.8. as well. 48.7:51.3 shows the vehicle split if LinSig were to assign the flows based on their delay; essentially the model assigns the flow in a way that it will experience the lowest volume of delay.
- 6.7. 25:75 and 72.9:27.1 shows the vehicle splits required if the junction were to operate with its highest degree of saturation being 90% and a PRC of 0%. Effectively this shows the vehicle splits for the junction to operate at capacity. As noted in paragraph 6.3 of NGPoE this is widely accepted as the maximum acceptable DoS.
- 6.8. The DoS and PRC results demonstrate that the junction will operate within capacity at a wide variety of vehicle splits across the two lanes. DoS is the most common method of assessing how a junction operates; delay and queuing in modelling is unstable and fluctuates greatly when minor amendments are made to the model.
- 6.9. Paragraph 6.32 in NGPoE states that the proposed indicative arrow produces a significant level of delay comparable to that of the rejected Single Lane Duelling scheme that was tested in VISSIM. The Single Lane Duelling scheme resulted in the junction operating overcapacity with vehicles not being able to clear the minor arm; the indicative arrow arrangement proposed operates within capacity.
- 6.10. Delay from two different modelling software packages and between a priority junction and signalised junction is not directly comparable. In its nature a signalised junction has to stop traffic to cater for other movements and the northbound flow needs controlling in order to allow the minor arm to clear at the junction. Newgate Lane East has been given priority as it receives the vast majority of green time and has been widened to two lanes through the junction in the northbound direction to mitigate the delay experienced when the traffic is stopped at the signals. The minor arm will always be subject to delay in order to prioritise the main movement. The minor arm still experiences lower queue lengths when signalised than when it is a priority junction.

- 6.11. NGPoE primarily focuses on the assessment of delay. Delay and queues are commonly seen as unstable modelling results due to the way in which they fluctuate; for planning applications and modelling assessments DoS and PRC are the primary methods of assessment.
- 6.12. When considering the model results for the proposed option it is demonstrated that the junction will operate within capacity and therefore without significant delay. As previously mentioned, it is believed that the split of traffic across two lanes will vary every cycle and that road users will naturally seek the routes that results in them experiencing lower volumes of delay. The vehicle split will vary every cycle hence a robust assessment of the junction has been undertaken.
- 6.13. In paragraph 6.3 of NGPoE it is accepted that 90% is the maximum acceptable DoS and we demonstrate the junction will operate below this at the vast majority of vehicle splits and all those below 80:20. Road users will naturally seek to achieve this DoS to avoid any latent queuing.

## 7. Conclusion

- 7.1. The PoEs submitted by Jonathan Mundy and Nick Gammer provide no evidence that the proposed junction design at Newgate Lane East and Old Newgate Lane is not appropriate. The junction that has been designed by Pegasus Group is in accordance with national standards and guidance.
- 7.2. Contrary to what is stated in NGPoE, our evidence does not rely on travel plan discounts and instead uses the 2024 flows agreed as part of the Transport Assessment. JMPoE and NGPoE both also present results for an option that fully signalises the right turn into Old Newgate Lane; we are not proposing this option as we agree that it results in unnecessary delay.
- 7.3. We are now proposing an indicative arrow; a design that not only is in accordance with national guidance but it is also appropriate for the location. The 85th percentile speeds are below 45mph and the volume of right turners is only anticipated to be 1-2 PCUs per cycle. A fully separately signalised right turn is unnecessary for the site and represents over-engineering. Even if capacity dictated it, it would not be an appropriate layout at this location.
- 7.4. Appendix D of JMPoE demonstrates that the split of traffic on the northbound approach will vary cycle by cycle hence we have undertaken assessments of the junction assuming a variety of vehicle splits. In the instances that the approach reaches capacity, we believe that the traffic will redistribute to reduce the delay experienced by road users. It will in effect be a self-regulating system with road users responding to any delay they experience.
- 7.5. As stated in NGPoE, 90% is largely accepted as the maximum level of DoS our results demonstrate that a lane split of 80:20 will result in this. JMPoE demonstrated that the average vehicle split will be 72.8:27.8.

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## Appendix A. LinSig Modelling Results