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PROOF OF EVIDENCE BY SAUMIL PATEL MA, MSC, DTECH

IN RESPECT OF

OUTLINE PLANNING APPLICATION FOR LAND AT NEWGATE LANE (NORTH), FAREHAM – APPEAL A

AND

OUTLINE PLANNING APPLICATION FOR LAND AT NEWGATE LANE (SOUTH), FAREHAM – APPEAL B

ON BEHALF OF FAREHAM LAND LP AND BARGATE HOMES LIMITED

LPA REF: P/18/1118/OA AND P/19/0460/OA

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Appeal by Fareham Land LP and Bargate Homes Limited

Outline Planning Applications for Land at Newgate Lane (North & South), Fareham

Proof of Evidence by Saumil Patel

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1 INTRODUCTION

1.1 My name is Saumil Patel, and I am a technical director of economics and business case at Sweco. I hold a Master of Arts Degree in Transport Economics, a Master of Science Degree in Transportation Planning and Engineering and a Diploma of Technology in Construction Technology. I am an active member of the Transport Economists' Group. I have been actively involved in providing transport economics advice for over 17 years. Over these years, I have worked in transport planning, strategy and advisory roles over a wide range of projects for both public and private sector clients. My skills and experience span scheme appraisal, business case development, strategic modelling and demand and revenue forecasting. My extensive knowledge of business case development and appraisal means that I am accustomed with central and local government processes, Transport Appraisal Guidance (TAG), the Value for Money (VfM) assessment framework and Cost-Benefit Analysis (CBA). Typical roles on projects such as Crossrail 2, Silvertown Tunnel and Highways England's Road Investment Strategy have included the estimation of wider economic benefits and the monetisation of journey time improvements, reliability, environmental and safety impacts.

1.2 My Evidence for this Inquiry has been prepared and is given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.

2 SCOPE OF EVIDENCE

2.1 Sweco were appointed by Bargate Homes Ltd. and Fareham Land LP on the 18th of December 2020 to undertake a technical review of the economic appraisal work at the junction of Newgate Lane East and Old Newgate Lane in Fareham, Hampshire. This was to support the outline planning applications submitted by Fareham Land LP and Bargate Home Ltd. for two housing developments: Newgate Lane (North) (LPA ref. P/18/1118/OA) and Newgate Lane (South) (LPA ref. P/19,0460/OA) respectively.

2.2 The following Proof of Evidence (PoE) has been prepared to respond to the Main PoE and Rebuttal PoE prepared by Mr Nick Gammer of Hampshire County Council (HCC) including the appended technical note titled "Newgate Lane Further Economic Appraisal" produced by Systra (Appendix NG6). This PoE specifically deals with matters raised by Mr Gammer relating to the derived Benefit Cost Ratio (BCR) value of the Newgate Lane East highway scheme and that in is his view the northern and southern appeal schemes will substantially reduce the benefits of the scheme. This is as a result of the additional delay associated with the introduction of both the proposed indicative arrow signalised junction between Newgate Lane East and Old Newgate Lane; and the toucan crossing provided at the existing crossing point between Woodcote Lane and Brookers Lane. This evidence by Mr Gammer is provided to support reason for refusal h for the northern appeal scheme and reason for refusal g for the southern appeal scheme.

2.3 As detailed in Section 5 of Mr Gammer's Main PoE where the issue of the impact of the appeal schemes on the economic benefit of the Newgate Lane East scheme were first raised, the reasons for objection were stated as follows:

a. Adding delay to Newgate Lane East due to the signalisation of Old Newgate Lane / Newgate Lane East of between 17.2 and 88.2 seconds in the AM peak, has a

substantial impact on the journey time savings and would substantially reduce the benefits of the improvements. In the AM and PM peaks, full signalisation eliminates all benefits of the improvement scheme. The delay due to implementation on the toucan crossing, which is necessary to make the development acceptable, should also be included, in addition to the delay due to signalisation of Old Newgate Lane / Newgate Lane East; under these circumstances all scheme benefits are eliminated for full signalisation in the AM peak and all benefits under all scenarios are eliminated for the PM peak hour. There would be a substantial reduction in the benefits of the Newgate Lane / Peel Common Roundabout improvement package for all other scenarios.

b. Furthermore, the Newgate Lane and Peel Common Roundabout improvements are part of a wider package measures (including Stubbington Bypass and A27 improvements) that work together to improve access to Fareham and Gosport; if one part of the package is not performing as expected, it will affect the benefits not just of this scheme, but of the package as a whole.

c. Given the above, the increases in delay would have a substantial impact on the benefits of the scheme and therefore on the BCR, the basis on which funding was provided and the scheme constructed. This supports the conclusion that the signalisation of Old Newgate Lane / Newgate Lane East and implementation of the toucan crossing as required to mitigate the development proposals would result in unacceptable harm to operation of the highway and is not in compliance with Development Plan policies CS5 and DSP40 and NPPF paragraph 109.

3 PURPOSES OF DERIVING BENEFIT COST RATIOS

3.1 Achieving VfM can be described as using public resources in a way that creates and maximises public value. The use of public resources is defined as public sector capital and resource expenditure, stewardship of assets, and raising revenue. Public value in a transport context, covers all the economic (e.g. travel time, vehicle operating costs, tax revenues); social (e.g. health, safety, accessibility); and environmental (e.g. noise, air quality, landscape) impacts of a proposal.

3.2 Although the underlying relationship between the use of public resources and public value is complex, a useful assessment of VfM can be made through a comparison of the cost of public resources expected to be used for a proposal and its expected impact on public value. The aim of the assessment is to help governmental funding decision makers judge whether the expected costs of a proposal are justified by its expected benefits to the public, including both positive and negative impacts of the proposal on the economy, society, environment, and public accounts. Consideration of these impacts is combined with an understanding of how these impacts are expected to vary across social groups.

3.3 The VfM assessment is carried out as a staged process (or incremental process) following Department for Transport (DfT) guidance as to ensure that a complete and robust analysis is undertaken. At Level 1, where benefits are primarily focused on the impacts on users of the transport network (such as time savings, vehicle operating cost savings due to highway decongestion and environmental impacts such as air quality, noise and carbon emissions), are well established. Level 1 produces an “Initial BCR” to be considered in the context of the DfT’s VfM categories. At Level 2, additional areas of benefits are included, for which the calculation approach is less established and more uncertain. These include further benefits to transport users for example journey time

reliability (JTR) improvements. Significantly, at Level 2, wider economic impacts (WEIs) driven by changes in accessibility are also captured, with the assumption of no change in land-use between scheme situations. Level 2 analysis produces an "Adjusted BCR" and perspective on VfM based on the DfT's VfM categories. At Level 3, the potential for a scheme to have transformational effects on the number and location of homes and jobs is captured. These are considered through the assessments of dynamic agglomeration (such as in the context of induced land-use change) and the effect of people moving to more productive jobs in response to the combination of transport improvements and land-use change. In addition, at Level 3, the net welfare effects of increased housing supply directly enabled by the scheme are captured. These reflect net increases in the affordability and condition of housing experienced by households across the market, net of any loss of value to property owners and wider externalities and costs associated with the development. Level 3 analysis produces a "Sensitivity BCR" to be considered in the context of the DfT's VfM categories. Lastly, non-monetised impacts should also be considered when understanding the VfM of a scheme's implementation. Non-monetised impacts include assessments of regeneration and how the scheme impacts social groups and the wider environment.

3.4 The incremental process of the VfM assessment considering the wide variety of costs and benefits that fall under Level 1, Level 2, Level 3 and non-monetised impacts allows for a robust analysis to be undertaken but also provides the most in depth and detailed understanding of how successful a scheme will be. The steps and levels of the assessment process are shown in Table 1.

TABLE 1: INCREMENTAL VFM ASSESSMENT FRAMEWORK

Benefits	Costs	VfM Classification
Level 1 Impacts		
Impacts associated with transport network (B)	Impact on government transport budget (C)	Initial BCR and VfM Classification (B/C)
Journey time savings (car and public transport-bus)	Public sector investment costs towards scheme delivery, operation and maintenance	
User delay impacts during construction / future maintenance		
Reduction in accidents	Changes in indirect tax revenue to public sector provides/operators	
Air quality, greenhouse gas (CO2) and noise impacts		
Level 2 Impacts		
Additional impacts associated with transport network (B1)	WEIs (B2)	Adjusted BCR and VfM Classification (B+B1+B2) / C
JTR impacts	Agglomeration (static)	
	Labour supply impacts	
	Output change in imperfectly competitive markets	
Level 3 Impacts		
WEIs (B3)		Sensitivity BCR and VfM Classification (B+B3+B1) / C
Agglomeration (dynamic)		
Moves into more productive jobs / employment		
Labour supply impacts		
Output change in imperfectly competitive markets		
Welfare impact of induced increase in housing supply (dependent development)		
Non-Monetised Impacts (NM)		
Economic impacts – regeneration, option value		Appraisal Summary and VfM Classification (B+B1+B2+B3+NM) / C
Social and distributional impacts – impact distribution by social groups		
Environmental – landscape, townscape, heritage, natural habitats, noise and water		

3.5 In combining these elements, the VfM assessment determines whether resources from the public budget available for transport are being used in a way that maximises public value. To reflect this, the key output of a VfM assessment is a VfM category. A category provides a succinct summary of the extent to which VfM is achieved by a proposal.

3.6 The VfM category is implied by the calculation of a BCR. A BCR provides a representation of the relative relationship between benefits and costs and allows easy comparison between schemes. It indicates how much benefit is expected for each unit of cost. A BCR of greater than one indicates that the benefits outweigh the costs. For example, a BCR of 2.0 suggests that for each pound of Broad Transport Budget expenditure, £2 of benefit to public value are expected to be generated. Table 2 below shows how BCR values obtained correlate to a VfM category.

TABLE 2: DFT CATEGORY DEFINITIONS

VfM Category	Implied by
Very high	BCR greater than or equal to 4
High	BCR between 2 and 4
Medium	BCR between 1.5 and 2
Low	BCR between 1 and 1.5
Poor	BCR between 0 and 1
Very Poor	BCR less than or equal to 0

3.7 The use of a BCR to inform planning permission is not the correct system and method of measurement. The impacts of a planning application span further than is covered and cannot be captured by calculating a BCR. The DfT's "VfM Framework" states that the VfM assessment determines whether resources from the public budget available for transport are being used in a way that maximises public value. The Appellant's scheme is to be funded privately, there will not be an impact on the public budget and public value and therefore meaning that there is no reason to be considering VfM and a BCR within this planning application.

4 RESPONSE TO HCC'S RECALCULATED BCR

4.1 In Mr Gammer's Main PoE it states that a BCR of 1.88 is the basis by which the Solent LEP funding was awarded, for the infrastructure package of improvements to the Newgate Lane corridor. This included improvements to the easterly access between the Gosport Peninsula and the strategic road network at the M27 Junction 11, with the Stubbington Bypass. These improvements have created a wider, higher standard route, with fewer side roads and access points, allowing for traffic to flow more smoothly thereby improving journey times and delay reduction. Mr Gammer's Main PoE states in paragraph 5.2 that the additional delay, introduced by the Appellant's scheme, occurring on Newgate Lane will directly impact upon the designated main easterly access route to / from the Gosport Peninsula therefore resulting in increased delays and the erosion of journey time benefits. Mr Gammer's Main PoE does not provide or state any revised BCR calculations and values accounting for the increased delay associated with the appeal schemes.

4.2 The Rebuttal PoE produced by Mr Gammer introduced new evidence adjusting the BCR calculation purportedly to account for what he considers to be the additional delay and increased journey times resulting from the proposed mitigation agreed to be provided by the appeal schemes, in isolation or both schemes combined. It should be noted that the agreed scope of the transportation works to support the outline planning applications for both the northern and southern appeal schemes did not require the Appellant to review or recalculate the BCR value as documented in the Rebuttal PoE.

4.3 Paragraphs 2.4 and 2.5 of Mr Gammer's Rebuttal PoE state that due to time constraints at the time of undertaking the BCR recalculation, a variety of assumptions were required to be made and used to derive a revised BCR value accounting for the impact of the appeal schemes. Mr Gammer's Rebuttal PoE states and confirms in his view a degree

of confidence by Systra in the assumptions and approach taken in forecasting the revised BCR values.

4.4 The approach taken to forecast the revised BCR values utilised delay per vehicle resulting from the northern and southern appeal schemes. These results are summarised in Tables 1, 2, 3 and 4 of Mr Gammer's Rebuttal PoE and have also been included in Appendix A of this PoE.

4.5 It should be noted in paragraph 3.1 of Mr Gammer's Rebuttal PoE that the initial delay per vehicle values set out in Mr Gammer's Main PoE are incorrect and states:

"The delay due to the proposed toucan crossing presented in my Proof of Evidence was based on a study from 2018, using traffic flows recorded that year. These flows do not include the changes in traffic assignment due to Stubbington bypass, background traffic growth, committed development or forecast development traffic. The toucan crossing delay resulting from these flows was included in my Proof of Evidence as there was not time to update the Toucan crossing modelling using the agreed assessment traffic flows. However, to provide an accurate forecast of traffic delay resulting from implementation of the Toucan crossing, this modelling has now been updated (Appendix NG5) using the same agreed forecast future year traffic flows as used in the junction assessments. The revised Toucan crossing vehicular delay is shown in Section 4 below."

4.6 In reference to Mr Gammer's Rebuttal PoE, it is stated in Table 5 that the implementation of the signals and the toucan crossing across all development scenarios considered results in a reduction in all BCRs to revised values below 1.5, with the combination of both the signals and toucan crossing dropping the BCR value below 0.5, "Poor" VfM. The PoE continues, stating in paragraphs 4.6 and 4.7, that with the inclusion of the Appellant's proposed mitigation and resulting reduction in journey time saving benefits, the costs of the Newgate Lane Improvement Package would substantially

outweigh the benefits, thus purportedly demonstrating that the implementation of the Appellant's proposed development mitigation would undermine the purpose and objectives of the Newgate Lane Improvement Package.

4.7 I have reviewed the traffic model outputs and economic appraisal undertaken by Systra and Mr Gammer to derive the revised BCR accounting for the impact of the northern and southern appeal schemes. I have not reviewed the original modelling and appraisal work undertaken in 2014 / 15 that formed part of the Newgate Lane Improvement Package business case and was awarded funding from Solent LEP. For present purposes I assume that this work was correctly undertaken.

4.8 It is my view that the work used by Mr Gammer to support the revised BCR values in the Systra technical note cannot be relied upon for the purposes of the appeal. This is because:

a. Delay Modelling – As detailed in Appendix B produced by Miss Martha Hoskins of Red Wilson Associates, LinSig modelling was used to inform the revised BCR calculation presented within Mr Gammer's Main PoE, Rebuttal PoE and Systra's technical note. The LinSig results presented have not accurately taken into account the width of the lanes thereby underestimating the saturation flow and resulting in increased delay. LinSig has further exaggerated the delay results as the degree of saturation in Mr Gammer's model is above 90%. LinSig as a modelling tool becomes ineffective when overcapacity. LinSig modelling is also typically used to assess capacity and queue lengths whereas micro-simulation modelling packages such as VISSIM provides a more detailed and accurate assessment of journey time and delay. VISSIM accounts for random arrival whereas LinSig is a deterministic modelling tool. Ultimately, in Miss Hoskins and my professional opinion, the use of the Solent Transport Sub-Regional Transport Model (SRTM) would be the most

appropriate tool to assess the recalculation of the BCR if it were necessary for a planning application. In the absence of time, Mr Gammer has utilised delay results from LinSig. However, Miss Hoskins believes these results exaggerate the delay and the use of VISSIM provides a more accurate assessment of the delay and journey time. Therefore, it is Miss Hoskins and my professional opinion that the use of VISSIM is preferred to LinSig when assessing delay and journey time for the purpose of calculating the revised BCR.

Based on these recommendations, Miss Hoskins has undertaken modelling within VISSIM for the toucan (document reference RWA-20-21-255, Appendix B). The findings of this work were that the value of delay associated with the toucan in Mr Gammer's Rebuttal PoE is overexaggerated. The VISSIM model, which is considered to provide a more accurate assessment of delay, shows that the greatest value of delay is only an additional five seconds per vehicle for vehicles travelling northbound in the AM peak. This is significantly less than the 62 seconds of delay per vehicle accounted for by Systra in the revised BCR calculations based on the information provided by Mr Gammer from the LinSig modelling results for the proposed toucan.

Therefore, it is my view that the inconsistent and unrepresentative delay values used to inform the BCR calculation cannot be relied upon.

b. Revised BCR Calculation Delay Inputs – When calculating a BCR, the benefits of a scheme are calculated by comparing the without scheme scenario against the with scheme scenario. However, it is my view that the revised BCR calculation work undertaken by Systra and Mr Gammer is not robust or consistent in its approach. For example, the 'without scheme' scenario is absent of key data inputs including vehicle delay values experienced by drivers currently on Newgate Lane East. In my

view, the absence of any delay values being inputted into the 'without scheme' scenario suggests that zero vehicle delay is assumed on all approaches without the implementation of the northern and southern appeal schemes in the BCR calculations. However, this simply does not represent reality as detailed by the junction modelling work carried out by Pegasus Group to support the outline planning applications. These assessments demonstrated that there are various levels of delay experienced throughout the local highway network within the vicinity of the appeal schemes, although at levels tolerated by the highway authority. Appendix B of this PoE also shows that vehicles experience delay at the existing junction. Therefore, the vehicle delay being attributed to the Appellant's scheme is significantly overestimated because the existing junction delay is not incorporated into the revised BCR calculations. The absence of this existing delay results in a significant drop in the revised BCR value.

In addition, the Solent Transport Sub-Regional Transport Model (SRTM) used to extract traffic demand for input into the revised BCR calculation, has not been updated to reflect the development scenarios considered and as a result the with scheme scenario does not include the impact of the appeal schemes. The impact of the appeal schemes is only captured through the delay times utilised. This is not an appropriate methodology for accurately calculating a BCR.

As the input data into the BCR calculations are incorrect and inappropriate, I do not consider that any reliance can be applied to the revised BCR results shown in Table 5 of Mr Gammer's Rebuttal PoE and Table 3 of Systra's technical note.

c. Revised BCR Calculation Inputs and Assumptions – When undertaking the revised BCR calculations, there is the requirement for the use of a number of different data inputs and factors. In addition to the vehicle delay, this includes values of time

(defined as the cost of the time that a traveller spends on their journey and required to convert time values into monetary values), annualisation factors (required to convert calculations to represent a full calendar year) and purpose split factors (required to define the purpose (i.e. business, commuting and leisure) of vehicle trips). These inputs and factors are crucial in converting modelled results such as vehicle delay into a monetised value. The DfT have produced the TAG Databook which provides all of these inputs and factors.

For the work undertaken by Mr Gammer and Systra, the DfT's TAG Databook November 2014, release version 1.3b was used. Since this release of the Databook there have been significant changes in a number of parameters including to the values of time and its application based on distance travelled. Subsequently, new versions of the Databook have been released. The latest version is July 2020 release version 1.13.1. Deriving BCRs using an older version of the Databook would not be meaningful and appropriate due to the wide range of changes made.

In addition, the revised BCR calculations completed by Systra and Mr Gammer include inconsistencies in the use and application of the inputs and factors within the Databook. For example, the purpose split factors used within the revised BCR calculations do not align with those in the Databook. There are further inconsistencies between the modelled data and how this has been used and applied within the revised BCR calculations. When undertaking the revised BCR calculations for the toucan crossing, the traffic model utilised is based on 2019 and 2036 traffic volumes. These traffic volumes are then compared against 2018 and 2024 delay data highlighting the fact that the years of the traffic model do not align to that of the delay data. These calculation results are then finally used to represent a 2015 and 2036 appraisal year. Again, this highlights how the traffic flows, delay data and appraisal years are inconsistent which will result in distorted results.

These inconsistencies, therefore, will result in inaccurate revised BCR results that cannot be relied upon with any degree of certainty.

d. Revised BCR Calculation Cost Consideration – When calculating a BCR value, the cost of implementing the proposed scheme is compared against the benefits accruing from the scheme. The cost is the impact that the scheme will have on the governments transport budget. In simple terms, this means that any private sector contributions to a scheme are to be considered a benefit rather than a cost. The revised BCR calculations undertaken by Systra and Mr Gammer do not include any construction costs associated with either the signals and / or the toucan crossing. The costs of delivering the Appellant's scheme are to be covered by the private sector. These private sector contributions should be included within the BCR calculation as additional benefits thereby resulting in greater ***benefits*** being derived.

4.9 The critical review points raised above render the revised BCR calculation work undertaken by Mr Gammer and Systra essentially meaningless. The lack of a robust, consistent and compliant methodology that accurately and fairly assesses the Appellant's scheme are the reasons why the current results and conclusions are inappropriate and why I have not sought to recalculate the BCR based on new traffic model data. To truly understand the impacts of the implementation of the scheme, the use of the Solent Transport Sub-Regional Transport Model (SRTM) would be the most appropriate modelling tool for the purpose of obtaining a revised BCR. The use of this model will align more closely with the work completed for the Newgate Lane Improvement Package business case and would also allow for the most up to date TAG Databook (July 2020 release version 1.13.1) to be used along with the DfT's industry standard Transport User Benefit Appraisal (TUBA) software accurately predicting the impact of the Appellant's scheme in relation to travel time and vehicle operating costs.

4.10 It is also crucial to note that journey time savings / benefits, which have been captured for this scheme, only form part of the overall VfM assessment of a scheme as per the DfT's "VfM Framework". The implementation of 190 dwellings along with necessary highway improvements is likely to generate wider benefits such as accident savings, social and distributional impacts and labour supply impacts which have not yet been captured. Therefore, the objection to the grant of planning permission on the ground of "significant erosion of the benefits" is not sufficient by looking simply at "journey time savings" (even if those had been correctly calculated by Mr Gammer and Systra) considering the large-scale benefits likely to accrue outside of those already captured.

4.11 Finally, the use of a BCR to inform planning permission is not the correct system and method of measurement. The impacts of a planning application span further than is covered and cannot be captured by calculating a BCR. The DfT's "VfM Framework" states that the VfM assessment determines whether resources from the public budget available for transport are being used in a way that maximises public value. With particular reference to the Appellant's scheme, as this is being funded privately, there will not be an impact on the public budget and therefore no reason to be considering VfM and a BCR within this planning application.

5 CONCLUSIONS

5.1 Within Mr Gammer's Main PoE where issues were first raised, the reasons for objection were stated as follows:

"The increases in delay would have a substantial impact on the benefits of the scheme and therefore on the Benefit Cost Ratio (BCR), the basis on which funding was provided and the scheme constructed. This supports the conclusion that the signalisation of Old Newgate Lane / Newgate Lane East and implementation of the toucan crossing as required to mitigate the development proposals would result in unacceptable harm to operation of the highway and is not in compliance with Development Plan policies CS5 and DSP40 and NPPF paragraph 109."

5.2 The exercise undertaken by Mr Gammer and Systra in recalculating the BCR is misguided because a BCR is not a tool for assessing the highways impact of a planning application for 190 dwellings. The main purpose of calculating a BCR is to understand whether resources from the public budget available for transport are being used in a way that maximises public value and therefore forms part of an exercise considering VfM for the aim of obtaining highways infrastructure funding. VfM is an assessment to assist in decisions to allocate highways infrastructure budget. It is an assessment that includes an array of wider issues not captured by a BCR value alone. The revised BCR calculations relied on by HCC are in error because:

a. The use of LinSig, the underestimation of saturation flow and the overcapacity model leads to overexaggerated delay results. LinSig modelling is typically used to assess capacity and queue lengths whereas micro-simulation modelling packages such as VISSIM provides a more detailed and accurate assessment of journey time and delay. The use of VISSIM for the toucan presents significantly lower levels of delay.

b. Within the revised BCR calculations undertaken there is an absence of any without scheme delay meaning that the assumption has been made that there is zero vehicle delay on all approaches without the implementation of the Appellant's scheme. It is my view that this simply does not represent reality as detailed by the junction modelling work carried out by Pegasus Group to support the outline planning applications and Appendix B. These assessments demonstrate that there are various levels of existing delay experienced throughout the local highway network within the vicinity of the appeal schemes.

c. The Solent Transport Sub-Regional Transport Model (SRTM) used to extract traffic demand, has not been updated to reflect the development scenarios considered. As a result, the with scheme scenario does not include the impact of the appeal schemes. The impact of the appeal schemes is only captured through the delay times utilised.

d. The revised BCR calculation completed by Systra and Mr Gammer include inconsistencies in the use and application of various inputs and factors. These include inconsistencies in the use and application of the TAG Databook as well in the application of the years represented by the traffic demand and vehicle delay.

e. The revised BCR calculation undertaken by Systra and Mr Gammer do not include any costs associated with either the signals and / or the toucan crossing. The costs of delivering the Appellant's scheme are to be covered by the private sector. These private sector contributions should be included within the BCR calculation as additional benefits thereby resulting in greater benefits being derived.

5.3 In my professional opinion the lack of a robust and compliant methodology that accurately and fairly assesses the Appellant's scheme are the reasons why the current

results and conclusions are inappropriate and why I have not sought to recalculate the BCR based on new traffic model data.

5.4 The implementation of 190 dwellings along with necessary highway improvements is likely to generate greater benefits than just travel time savings such as accident savings and labour supply impacts which have not yet been captured. Therefore, the rebuttal of planning permission on the ground of "significant erosion of the benefits" is not enough of a reason considering the large-scale benefits likely to accrue outside of those already captured.

5.5 The use of a BCR to inform planning permission is not the correct system and method of measurement. The impacts of a planning application span further than is covered and can be captured by calculating a BCR. The DfT's "VfM Framework" states that the VfM assessment determines whether resources from the public budget available for transport are being used in a way that maximises public value. With particular reference to the Appellant's scheme, as this is being funded privately, there will not be an impact on the public budget and therefore no reason to be considering VfM and a BCR within this planning application.

APPENDIX A MR NICK GAMMER'S REBUTTAL PROOF OF EVIDENCE – SUMMARY OF DELAY DUE TO MITIGATION PROPOSALS

	75 Dwellings	115 Dwellings	190 Dwellings
AM			
Newgate Lane East Northbound	10.9	11	11
Newgate Lane East Southbound	6.3	6.7	7.4
Newgate Lane	64.8	67.8	75.7
PM			
Newgate Lane East Northbound	4	4	4
Newgate Lane East Southbound	4.7	4.7	4.7
Newgate Lane	64.6	65.8	68.7

Table 1: Indicative Arrow Delay per Vehicle (seconds), Appellant Modelling
Source: Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

	75 dwellings	115 dwellings	190 dwellings
AM			
Newgate Lane East northbound	11.8	11.8	12.0
Newgate Lane East southbound	6.0	6.5	7.2
Old Newgate Lane	68.0	72.6	85.7
PM			
Newgate Lane East northbound	4	4	4
Newgate Lane East southbound	4.7	4.7	4.7
Old Newgate Lane	64.6	65.8	68.7

Table 2: Indicative Arrow Delay per Vehicle (seconds), HA Modelling
Source: HA Modelling Indicative Arrow, October 2020, (Appendix NG3)

	75 dwellings	115 dwellings	190 dwellings
AM			
Newgate Lane East northbound	57.8	59.1	62
Newgate Lane East southbound	3.9	3.9	4
PM			
Newgate Lane East northbound	5	5	5.1
Newgate Lane East southbound	5.2	5.3	5.3

Table 3: Toucan Crossing Delay per Vehicle (seconds), Agreed Traffic Flows and Development traffic
Source: HA Modelling, November 2020 (Appendix NG5)

	75 dwellings HA modelling	75 dwellings Appellant modelling	115 dwellings HA modelling	115 dwellings Appellant modelling	190 dwellings HA modelling	190 dwellings Appellant modelling
AM						
Newgate Lane East northbound	69.6	68.7	70.7	70.1	74	73
Newgate Lane East southbound	9.9	10.2	10.4	10.6	11.2	11.4
PM						
Newgate Lane East northbound	9	9	9	9	9.1	9.1
Newgate Lane East southbound	9.9	9.9	10	10	10	10

Table 4: Combined junction signalisation and Toucan Crossing Delay per Vehicle (seconds)
Source: HA Modelling, November 2020 (Appendix NG5), Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142), HA Modelling, November 2020 (Appendix NG5).

APPENDIX B RWA-20-21-255 VISSIM DELAY RESULTS

Technical Report

Project:	Newgate Lane, Fareham		
Client:	Bargate Homes and Sustainable Land		
Subject:	VISSIM Delay Results		
Prepared by:	Martha Hoskins	Date:	04/01/2020
Checked by:	Peter Gocke	Date:	05/01/2020
Document ref:	RWA-20-21-255		

RWA-20-21-255

VISSIM Delay Results

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. Introduction

1.1. The following technical note will address the new evidence produced as part of Mr Gammar's Rebuttal. LinSig modelling of the Toucan crossing has been used to recalculate the BCR. The value of delay used in the BCR calculation has been exaggerated by LinSig and as such to understand the true impact in the absence of the SATURN model VISSIM has been used.

1.2. This technical note particularly addresses:

- The impact of a Toucan crossing on Newgate Lane East south of the junction with Old Newgate Lane;

1.3. The technical note will solely address the value of delay associated with the Toucan crossing used by Systra to calculate the BCR. I have been advised that in order to calculate BCR, one of the many inputs is delay or journey time which is normally derived using SATURN.

1.4. In the absence of the SATURN model, VISSIM is seen to be an appropriate alternative method as opposed to LinSig. More detail regarding the calculation of the BCR is provided in the Proof of Evidence produced by Mr Andre Goncalves and Mr Saumil Patel as they are the expert witnesses on this subject.

1.5. This technical note will focus on the modelling of both developments and the total 190 dwellings. It assumes 100% private dwellings.

2. Assessment of the Toucan Crossing

2.1. Chapter 4 of Mr Gammer's Rebuttal addresses the recalculation of the BCR of Newgate Lane East. Demand modelling is typically used to calculate BCR, such as SATURN, however in the absence of time, Mr Gammer has used LinSig delay results.

2.2. The LinSig results presented have not taken into account the width of the lanes and has just used the LinSig standard of 3.25 metres. This underestimates the saturation flow and therefore increases delay. LinSig has further exaggerated the delay results as the degree of saturation in Mr Gammer's model is above 90%.

2.3. LinSig modelling is typically used to assess capacity and queue lengths whereas VISSIM provides a more detailed and accurate assessment of journey time and delay. VISSIM accounts for random arrival whereas LinSig is a deterministic modelling tool. Therefore, VISSIM is widely the preferred tool when assessing delay and journey time.

2.4. The Toucan has been input into the VISSIM model using the same signal timings as the LinSig model produced by Mr Gammer. On review of the LinSig modelling it can be noted that the lane widths have been underestimated therefore underestimating the saturation flow and exacerbating the delay results.

2.5. Table 2-1 below demonstrates the VISSIM modelled difference delay if the Toucan crossing were to be introduced.

2.6. The table includes the following scenarios:

- The future base without the development
- The future base assuming 190 dwellings and the introduction of the Toucan

2.7. Delay readings have been captured using the node function in VISSIM. A node was created around the toucan as shown in Figure 1. The delay results are taken from the point where the node touches the link to the next point on the link where the node touches.

Figure 1 - Toucan Node in VISSIM Showing Points for Delay Measurement

Table 2-1 - VISSIM Delay Comparison with Toucan (Seconds delay per vehicle)

	Future Base	190 Dwellings + Toucan	Difference
AM			
North to South	4.11	5.95	1.84
South to North	8.29	13.04	4.75
PM			
North to South	4.53	6.82	2.29
South to North	3.68	6.10	2.42

2.8. The VISSIM delay results demonstrate that the impact of the Toucan is negligible on delay. The maximum increase in delay is for vehicles travelling northbound in AM who will experience a delay of less than five seconds. All other changes in delay are between one and three seconds. Therefore, the impact on the movements from the north and south can be seen as negligible in both the AM and PM modelled periods.

2.9. The results show that the delay experienced by road users was overexaggerated in the LinSig and are anticipated to be negligible as shown by the VISSIM modelling.

This is anticipated due to the infrequency in that we would expect the Toucan to be called due to the low pedestrian demand.

3. Conclusion

3.1. The rebuttal submitted by Nick Gammer provided evidence regarding the recalculation of the BCR. The calculations utilised the delay from LinSig. Due to the reduced road widths used in the model, the results were overcapacity. LinSig as a modelling tool becomes ineffective when overcapacity hence VISSIM is a more appropriate tool to use.

3.2. Ultimately SATURN modelling would be the most appropriate tool to assess the BCR if it were necessary for a planning application. In the absence of time Nick Gammer has utilised delay results from LinSig however I believe these results exaggerate the delay associated with the Toucan. As stated in 3.3 microsimulation modelling provides a more accurate assessment of the delay and journey time.

3.3. The value of delay associated with the Toucan in Nick Gammer's rebuttal is overexaggerated. The VISSIM model, which provides a more accurate assessment of delay, shows that the greatest value of delay is an additional five seconds for those travelling northbound in the AM peak.