PROOF OF EVIDENCE OF CHRIS WHITEHEAD

IN RELATION TO THE

Outline Planning Permission For The Demolition Of Existing Buildings And Development Of Up To 75 Dwellings, Open Space, Vehicular Access Point From Newgate Lane And Associated And Ancillary Infrastructure, With All Matters Except Access To Be Reserved. Land At Newgate Lane (North) Fareham.

PLANNING REFERENCE P/18/1118/OA

APPEAL REFERENCE APP/A1720/W/20/3252180

AND

Outline Planning Permission For The Demolition Of Existing Buildings And Development Of Up To 115 Dwellings, Open Space, Vehicular Access Point From Newgate Lane And Associated And Ancillary Infrastructure, With All Matters Except Access To Be Reserved. Land At Newgate Lane (South) Fareham.

PLANNING REFERENCE P/19/0460/OA

APPEAL REFERENCE APP/A1720/W/20/3252185

SYSTRA

NEWGATE LANE PLANNING APPEAL

PROOF OF EVIDENCE OF CHRIS WHITEHEAD

IDENTIFICATION TABLE	
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APPENDICES

1. INTRODUCTION AND SCOPE OF EVIDENCE

1.1.1 My name is Chris Whitehead and I am an Associate Director employed at SYSTRA Ltd. I hold a BEng degree in Civil Engineering and I am a Chartered Civil Engineer dealing extensively with local and strategic transport modelling, transport planning, and scheme appraisal. I have been working in the transport planning industry since 1999.

1.1.2 Since 2011, I have been SYSTRA's Framework Manager for the development and application across southern Hampshire of Solent Transport's Sub-Regional Model (SRTM). In this capacity I have had involvement in over 100 separate commissions of the model, a significant number of which have included scheme appraisal and cost-benefit analysis. Such schemes have included the Stubbington Bypass in Fareham, M3 Junction 9 improvements, and Welborne/ M27 J10. Through my project experience I am familiar with the application of Cost-Benefit Analysis and DfT's Transport Appraisal Guidance.

1.1.3 In addition, I was Project Director for the application of the SRTM and associated Cost-Benefit Analysis of the Newgate Lane East and Peel Common roundabout scheme (from 2014/15) that forms the basis against which the current proposals on Newgate Lane are being compared.

1.1.4 This Proof of Evidence (PoE) has been prepared at the request of Hampshire County Council (HCC) in response to the PoE prepared by Mr Saumil Patel on behalf of the Appellant. Mr Patel's PoE was prepared in response to Mr Nick Gammer's (from HCC) Rebuttal PoE. With Mr Gammer unable to attend the inquiry, I am providing evidence on BCR matters (Sections 2 and 4 of Mr Gammer's Rebuttal PoE), Ken Dudley will be covering the general Transport Planning aspects with the signalised elements (junction and Toucan crossing) including traffic modelling being dealt with by Jonathan Mundy.

2. REVISION TO BCR CALCULATION

2.1.1 In the course of preparing this rebuttal it has become apparent that the saturation flows used in the Linsig modelling for the Toucan crossing, that in turn provided the delay outputs for the BCR calculations, were too low. This is one of the points that was raised by Mr Patel in Section 8.4a of his PoE.

2.1.2 A drawing (included as Appendix A) of the proposed Toucan crossing arrangement has come to light that was not taken in to account in the original Linsig modelling. Whilst the final design of the crossing is still subject to agreement/ sign-off, it is accepted that based on the carriageway width shown in this drawing, the lane widths and associated saturation flow at the crossing were underestimated in the original Linsig model.

2.1.3 An amended saturation flow of 2105PCU/hr that is consistent with the RR67 value identified by Miss Martha Hoskins of Red Wilson Associates in her email of 21/01/2021 (Appendix B to this PoE) has been used in a revised set of Linsig model runs. All other aspects of the Linsig models are unchanged from the earlier submission.

2.1.4 The updated Linsig models have output a new set of vehicle delay values as summarised in Table 1 and Table 2 below. These tables replace are equivalent to Table 1 and 2 as presented in SYSTRA's Information Note included as Appendix NG6 to Mr Gammer's Rebuttal PoE. Table 2 is also equivalent to Table 3 as presented within the main body of Mr Gammer's Rebuttal PoE.

Table 1. 2018 Toucan Crossing Linsig Modelling Vehicle Delay (seconds/ PCU)

APPROACH	AM PEAK	PM PEAK	OFF PEAK
Newgate Lane East N/B	8.3	4.3	4.0
Newgate Lane East S/B	3.8	26.9	5.1

Table 2. 2024 Toucan Crossing Linsig Modelling Vehicle Delay (seconds/ PCU)

	75 HOUSEHOLDS		115 HOUSHOLDS		190 HOUESHOLDS	
	AM	PM	AM	PM	AM	PM
Newgate Lane East N/B	18.3	4.4	18.4	4.4	18.8	4.5
Newgate Lane East S/B	3.5	4.6	3.6	4.6	3.6	4.6

2.1.5 Table 3 below summarises the total combined junction signalisation and Toucan crossing delay per vehicle to account for the revised Toucan delays presented above. The table is equivalent to Table 4 in Mr Gammer's Rebuttal PoE.

Table 3. Combined junction signalisation and Toucan crossing vehicle delay (seconds/PCU)

	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 N/B	30.1	29.2	30.2	29.4	30.8	29.8
Newgate Lane East S/B	9.5	9.8	10.1	10.3	10.8	11.0
PM						
Newgate Lane East N/B	8.4	8.4	8.4	8.4	8.5	8.5
Newgate Lane East S/B	9.3	9.3	9.3	9.3	9.3	9.3

2.1.6 The vehicle delay outputs from the Linsig modelling form a key input to the BCR calculations. The BCR calculations have been updated to take account of the amended vehicle delay inputs and are presented in Table 4 below and are equivalent to Table 5 within Mr Gammer's Rebuttal PoE. For reference, DfT's Value for Money (VfM) category by BCR value is included as Figure 1.

Table 4. Revised BCR Values

	75 DWELLINGS	115 DWELLINGS	190 DWELLINGS
Junction Signalisation (Appellant modelling) Only	1.48	1.47	1.45
Junction Signalisation (HA modelling) Only	1.47	1.46	1.44
Toucan Crossing Only	1.43	1.43	1.42
Junction Signalisation (Appellant modelling) + Toucan	1.03	1.02	0.99
Junction Signalisation (HA modelling) + Toucan	1.03	1.01	0.98

Box 5.1 Standard Categories
(Transport cost outlays exceed revenues or cost savings)

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

**Relevant indicative monetised and/or non-monetised impacts must also be considered and may result in a final value for money category different to that which is implied solely by the BCR. This chapter provides guidance on how to select the final value for money category.*

Figure 1. DfT Value for Money Framework

2.1.7 The Newgate Lane East and Peel Common roundabout schemes were delivered against a BCR of 1.88 that was within the Medium VfM category. Considering the Appellent's schemes in isolation the BCR is forecast to drop to the range of 1.42-1.48 that falls within the Low VfM category. Including the schemes in combination reduces the BCR to the range of 0.98-1.03 and is on the Low/Poor threshold of VfM. A BCR of less than 1 means the scheme costs outweigh the benefits.

Summary of Revised BCR Calculation

2.1.8 The Linsig and BCR calculations have been updated to account for a higher vehicle saturation flow than previously accounted for at the proposed Toucan crossing on Newgate Lane East. For the schemes in combination, this has reduced the forecast delay per vehicle in the AM peak to approximately 30s northbound and 10s southbound on Newgate Lane East. In the PM peak the delay per vehicle is just under 10s in both directions.

2.1.9 Despite the increased saturation flow, the updated BCRs remains in the Low or Poor VfM categories and when considered in combination effectively half the original Newgate Lane/ Peel Common Scheme BCR. I believe this does not change the conclusion that the proposed development and associated highway schemes have a significant impact on the performance of the recently completed Newgate Lane East scheme and would have meant such an improvement package would have been unlikely to be funded.

3. REBUTTAL TO MR PATEL'S POE

3.1.1 As addressed in Section 2 of this PoE it is accepted that the Saturation Flow used in the initial Linsig modelling for the Toucan crossing was low. The remainder of this Section provides my rebuttal against the remaining points identified by Mr Patel.

3.1.2 As a starting point, one of the overarching themes of Mr Patel's PoE is that the use of a BCR to inform a planning permission is not the correct system and method of measurement. Pertinent to that is that the scheme would be funded privately and would not therefore impact on the public budget and public value. The fact that the schemes are to be privately funded is not disputed but there is a clear impact on public value particularly when the schemes are located on an only recently completed publicly funded set of highway infrastructure comprising Newgate Lane East itself and the updated junction at Peel Common roundabout.

3.1.3 The use of an updated BCR is to demonstrate just how substantial that impact is. More specifically, the use of the updated BCR shows that the Appellant's scheme with the level of vehicle delay forecast would reduce the benefits to such a degree that the scheme would have been unlikely to receive funding and essentially negating the £12M public investment. Therefore I believe the updated BCR is highly relevant to determining the planning permission.

3.1.4 The BCR of 1.88 for the original Newgate Lane East/ Peel Common scheme did not include for any wider benefits outside of impacts associated with the transport network. For a consistent comparison the updated BCR as presented in this appeal only includes impacts associated with the transport network. However, if the inclusion of wider benefits were to be quantified for the Appellant's scheme, there should also be consideration of the reduction in wider benefits, including regeneration housing and jobs, facilitated by the original Newgate Lane/ Peel Common scheme resulting from the increased delay on Newgate Lane East.

3.1.5 Turning to the specifics of the calculation of the updated BCR, in Section 4.8 of Mr Patel's PoE he sets out four broad areas (Delay Modelling, BCR Calculation Inputs, BCR Calculation Assumptions and Inclusion of Scheme Costs), and for which he states the revised BCR calculation cannot be relied upon and I address these in turn below.

Delay Modelling (Section 4.8a of Mr Patel's PoE)

3.1.6 Mr Patel's PoE sets out why he believes that the Linsig modelling for the Toucan crossing that was used to determine the delay associated to this crossing is not representative of the scheme and suggests VISSIM is a more appropriate assessment tool. Mr Patel's PoE draws upon a technical note (included as Appendix B to his PoE) prepared by Miss Martha Hoskins that includes an alternative set of delay outputs produced using a VISSIM model. The VISSIM modelling for the Toucan is new piece of evidence and in addition to the documents mentioned above, I have also sought clarification from Miss Hoskins on the saturation flow included within the VISSIM modelling and the email exchange related to this from 21/22 January 2021 is included as Appendix B to this PoE. This exchange also in part informed the revised Linsig modelling in Section 2 of this PoE.

3.1.7 First I will address the VISSIM modelling presented within Mr Patel's PoE and from which the outputs are also referenced in Mr Tony Jones' PoE. On reviewing the VISSIM technical note, and the additional information provided by Miss Hoskins on 22 January, I have the following concerns in what is reported in the PoE regarding the VISSIM model.

3.1.8 Table 2.1 in Appendix B to Mr Patel'e PoE provides the VISSIM delay comparison between the Future Base scenario and the 190 Dwelling + Toucan scenario. I assume the Future Base does not include for the Toucan crossing as this scheme would only be delivered with the development so I do not believe there should be any delay at the location in the future base (i.e it's a free-flowing section of road). In this case, the delay data presented in the 190 Dwelling + Toucan column of Table 2.1 is also the difference compared to the future base and the column titled 'Difference' is incorrect. Based on the data presented in Table 2.1, I believe the delay difference in the AM peak is 5.95s and 13.04s and not 1.84s and 4.75s for the southbound and northbound movements respectively. In the PM peak it should be 6.82s and 6.1s and not 2.29s and 2.42s for the southbound and northbound movements respectively. The underestimated values in the 'Difference' column of Table 2.1 are reported in the main body of both Mr Patel and Mr Jones' PoE.

3.1.9 In addition, the comparison between delay data from the Linsig and VISSIM models is not a true like-for-like comparison of the performance of the two pieces of software and I don't believe any conclusions can be drawn from this as currently presented in Mr Patel's PoE. As presented, it shows the outcome of using two different pieces of software with two different sets of capacity parameters – in this case the Saturation Flow. More specifically, the saturation flows used in the models are widely different and summarised in 0 and section 3.1.10 below. The purpose of the table is to demonstrate that the model software comparison in Mr Patel's PoE is not like-for-like and does not account for the updated Linsig saturation flows from Section 2 to this PoE.

3.1.10 The saturation flows by lane used in a model effectively represent the flow capacity of that particular traffic lane and a higher saturation flow would result in less vehicle delay. The VISSIM saturation flows (provided by Miss Hoskins – see Appendix B), range between 7.6% to 13.7% higher than the original Linsig values and it is therefore not surprising that the delay forecast by the VISSIM model is lower than the original Linsig modelling. In my view the lower delay forecast by VISSIM is not driven by the piece of software used, but by the difference in saturation flow and you cannot draw any conclusion on the appropriateness of either VISSIM or Linsig based on that (I present a like-for-like comparison between the software in Section 3.1.11 below). The use of higher Saturation flows for the Linsig model has been addressed in Section 2 to this PoE in accordance with lane widths and RR67 calculations, but I also note that the VISSIM saturation flows as modelled are an overestimate compared to the RR67 value of 2105 PCU/Hr.

Table 5. Linsig v Vissim Saturation Flow Comparison

TOUCAN APPROACH	LINSIG SATURATION FLOW (PCU/HR)	VISSIM SATURATION FLOW (PCU/HR)	DIFFERENCE	% DIFFERENCE
AM				
Newgate Lane East Southbound	1940	2178	238	12.3%
Newgate Lane East Northbound	1940	2150	210	10.8%
PM				
Newgate Lane East Southbound	1940	2205	265	13.7%
Newgate Lane East Northbound	1940	2088	148	7.6%

3.1.11 To eliminate the variance in Saturation flow (shown in 0) when comparing the model outputs from the different modelling software, we have rerun the HCC Linsig model with same saturation flows as included in the VISSIM model. 0 below presents the delay outputs from this amended Linsig model against the VISSIM model outputs for the 190 Dwelling scenario. The table shows the when using matching inputs, the absolute difference in delay per vehicle is a good match between the two pieces of software. This confirms there is no significant difference in performance of the two different pieces of software when used on a like for like basis and that Linsig is a suitable tool for determining the vehicle delay for input to the BCR.

Table 6. Linsig v VISSIM Delay per PCU comparison in seconds (identical saturation flows)

TOUCAN APPROACH	LINSIG DELAY PER PCU	VISSIM DELAY PER PCU	DIFFERENCE	% DIFFERENCE
AM				
Newgate Lane East Southbound	3.5	5.95	2.45	70%
Newgate Lane East Northbound	15.7	13.04	-2.66	-17%
PM				
Newgate Lane East Southbound	4.3	6.82	2.52	59%
Newgate Lane East Northbound	4.6	6.10	1.5	33%

3.1.12 Turning to Mr Patel's specific comments on the Linsig modelling Mr Patel states that

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.

3.1.13 The suggestion that the delay results are exaggerated because the degree of saturation (DoS) is in excess of 90% is not backed up by any evidence in the Mr Patel's or Miss Hoskins comments. With any piece of modelling software there is an element of caution that needs to be applied when reviewing model outputs on those movements that are forecast to be either approaching capacity (DoS >85%) or over capacity (DoS >100%) particularly if there is no existing junction to calibrate or validate against. This is because junctions operating at these levels of DoS have very little or no spare capacity to absorb the impact of variations in typical flow or user behaviour. Such small variations may have a large impact on delay or queues.

3.1.14 As also noted by Mr Patel, Linsig is a deterministic modelling tool and does not explicitly account for random flow arrivals as VISSIM can. Taken in isolation this fact would imply that Linsig would under represent delay because it does not include the variations in flow that can be so detrimental to junction performance as set out in Section 3.1.13 above. However, when determining delay on approaches with a DoS > 80%, Linsig includes for a component of Random Delay in the overall delay value. This is a standard feature within the Linsig software and is included as an attempt to represent the impact of flow variations on approaches that are close to capacity in the same way VISSIM would apply random arrival patterns.

3.1.15 It could be that the inclusion of this random delay is the reason for the suggestion by Mr Patel that Linsig has exaggerated the delay at the Toucan but as noted above this feature

is there to address that fact that Linsig does not represent random flow arrival patterns that was another issue raised by Mr Patel.

3.1.16 The use of a Random Delay feature at signal controlled junctions is not unique to Linsig and, most relevant to this appeal, is included within SATURN modelling software (Section 8.6 of the SATURN User Guide). SATURN is the software used for the highway model within the SRTM and which informed the BCR value of 1.88 for the original 2014/15 Newgate Lane East / Peel Common Roundabout that is being compared against in this appeal. For comparison purposes we have prepared a stand-alone SATURN model of the Toucan crossing that uses matching traffic flows (2024), traffic signal effective green timings, and saturation flows to the Linsig modelling. Table 7 below compares the output delay for the Linsig and SATURN models for the Toucan crossing for the 190 dwelling development scenario. The results confirm that given matching flows, signal timings and saturation flow the delay results between SATURN and Linsig at a signal junction are comparable and therefore Linsig is considered a suitable tool for informing the revised BCR to be compared against the original 2014/15 value.

Table 7. Linsig v VISSIM Delay comparison (identical saturation flows)

TOUCAN APPROACH	LINSIG DELAY (SEC/PCU)	SATURN DELAY (SEC/PCU)	DIFFERENCE	% DIFFERENCE
AM				
Newgate Lane East Southbound	4	4	0	0%
Newgate Lane East Northbound	62	68	6	9.7%

Revised BCR Calculation Delay Inputs (Section 4.8b of Mr Patel's PoE)

3.1.17 The purpose of the BCR calculations is to monetise the differences in costs and benefits between the scenarios with and without the schemes on Newgate Lane East. The revised BCR has used the Linsig forecast delay values at the new signal junction and Toucan crossing on Newgate Lane East to represent the change in benefits between the with and without scheme scenarios.

3.1.18 Mr Patel states that the delay difference on Newgate Lane East attributed to the Appellants scheme is significantly overestimated because existing network delay is not accounted for. Mr Patel cites the modelling prepared by Pegasus Group as part of the planning application to support this point (but does not present any actual delay values) in addition to Table 2.1 in Miss Hoskins Technical Note.

3.1.19 The current on-street arrangement at the junction of Newgate Lane East/ Old Newgate lane is a non-signalised T-junction with Newgate Lane East as the priority movement. For Newgate Lane East, the only movement that is required to give-way, and therefore is subject to delay, is the right turn from the northern approach of Newgate Lane East to Newgate Lane. Vehicles making this right turn have a dedicated right turn pocket and do

not inhibit or delay the southbound ahead movement on Newgate Lane East. The volume of traffic making this right turn is low in the existing situation (in the region of 30 movements in the peak hour) and the net contribution of delay of these 30 vehicles compared to the 2000-3000 thousand two-way vehicles experiencing delay on Newgate Lane East in the peak hour due to signals is not considered material on the updated BCR value.

3.1.20 I have already set out in section 3.1.8 of this PoE why I do not consider that there are any without scheme vehicle delays on Newgate Lane East at the site of the proposed Toucan crossing and so do not consider the delay is over represented at that location (i.e the without scheme vehicle delay is zero) .

3.1.21 Mr Patel goes on to claim that because the SRTM model was not amended to include the Appellant's schemes, the updated BCR does not include for the impact of the schemes (aside from the delay impacts). I assume this means the impact from existing trips either redistributing or reassigning away from Newgate Lane East to alternative routes to avoid the delay or shifting mode from car. The fact that redistribution etc. is not accounted for is also identified in the BCR assumptions in SYSTRA's technical note. However, It follows that any redistribution etc. would still be at a cost to the alternative routes they are assigned to and remains a disbenefit resulting from the Appellant's scheme. I do not consider the BCR would change significantly or that the reassignment of existing trips away from the strategic route of Newgate Lane East is a desirable impact of the scheme.

Revised BCR Calculation Inputs and Assumptions (Section 4.8c of Mr Patel's PoE)

3.1.22 In his POE, Mr Patel queries the version of the DfT TAG databook utilised for the updated BCR calculations and identifies a number of perceived inconsistencies in the calculation process that I will address in turn.

3.1.23 In terms of the version of the TAG databook used, we have applied the version that is consistent with the determination of the BCR for the original Newgate Lane/ Peel Common roundabout study dating back to 2014/15. It is acknowledged that there is now a more up to date version of the TAG databook but using the values from the current version would not provide a like-for-like comparison to the monetised values and BCR from the 2014/15 study. The alternative would have been to update the 2014/ 15 study with the new TAG databook but this was not viable in the time available.

3.1.24 Mr Patel highlights that the purpose split factors used in the revised BCR do not align with those in the TAG databook. The revised BCR uses traffic flow data extracted from the SRTM model and is consistent with that used in the original 2014/15 BCR. The SRTM model determines traffic flow by journey purpose. The SRTM was developed utilising a large survey dataset including Road Side Interviews. The base year and forecast year demand within the model takes account of the locally observed journey purpose split and is considered more representative of local conditions than generic databook values. The SRTM model and modelling procedures (that include purpose splits) has been subject to review by DfT on a number of Business Case and BCR submissions.

3.1.25 Mr Patel identifies inconsistencies between the modelled years for delay data and traffic flows input to the BCR calculations. For the revised BCR calculations we were provided two alternative sets of delay data produced by Linsig models for the proposed Toucan

crossing; one from a 2018 study that included flow data for that year and one updated model for 2024 flows. The two datasets were used to produce two alternative revised BCRs. In each of the two alternatives the single year Linsig value of delay per vehicle was applied to all years (across the 60 year appraisal period) when calculating the total delay per year. With fixed signal timings at the Toucan crossing it would be expected that delay per vehicle at crossing would increase as traffic flows increase and vice-versa. Therefore, utilising identical delay per vehicle data for each year would be expected to overestimate delay in the years prior to that year and underestimate delay in the years beyond that point. The appraisal period covers the 60 years from 2015 through to 2074. In this instance, using the 2018 delay data would underestimate delay in the 3 years prior to 2018 and underestimate delay for the remaining 57 years. In the case of the 2024 data it would overestimate the delay for the 9 years prior to 2024 and underestimate for the 51 years beyond 2024. In both instances the net delay over 60 years is considered an underestimate and therefore the BCR is an overestimate.

Revised BCR Calculation Cost Consideration (Section 4.8d of Mr Patel's PoE)

3.1.26 Mr Patel states correctly that the revised BCR calculations do not include any construction costs associated with either the signal junction at Newgate Lane/ Newgate Lane East or the Toucan crossing on Newgate Lane East to the south of the signal junction. Mr Patel confirms the Appellant's scheme construction costs would be covered by the private sector and that as such should be included as additional benefits within the BCR calculation.

3.1.27 The text in italics below is from Section 11.1.9 of DfT's TAG Unit A1.3 – User and Provide Impacts (included as Appendix C). For reference, the Public Accounts (PA) table sets out the cost of the scheme. The Transport Economic Efficiency (TEE) table summarises the monetised benefits for transport users and private sector providers.

When developers make contributions, the full investment cost should be attributed to either local or central government in the PA table, with negative values recorded in the 'Developer contributions' rows of both the TEE table (to show the cost to the developer) and the PA table (to show the reduction in cost to the public sector).

3.1.28 Applying the above to the revised BCR calculations would therefore require the following:

- Total scheme construction cost (to either local or central government) increased to include for the signal junction and Toucan crossing
- The above construction cost increase offset by a negative cost against developer contributions
- Scheme benefits reduced in line with the value of the developer contribution

3.1.29 The net impact of the first two bullets is that for the BCR calculation the costs would remain unchanged. However, the benefits would need to be reduced in accordance with the value of the developer contribution.

3.1.30 This means the net benefits reduce and not increase as is claimed by Mr Patel in his PoE and the BCR value would also reduce compared to the currently reported values.

4. SUMMARY AND CONCLUSION

4.1.1 The Linsig modelling and BCR calculations have been amended to take account of a higher saturation flow on both approaches of Newgate Lane East to the proposed Toucan crossing. This has reduced the scale of delay compared to that previously reported but the impacts to the scheme BCR remain significant and the schemes in combination reduce the BCR to approximately 1 that is on the threshold of the Low/ Poor DfT category for value for money.

4.1.2 For a development scheme that has such a significant impact on the performance and associated value of recently competed, publicly funded set of highway infrastructure, the use of an updated BCR value in considering the planning permission is considered appropriate. The calculation of the BCR has utilised the TAG databook applicable at the time of the original scheme BCR to provide a valid comparison to the original BCR value of 1.88. Only costs and benefits associated with the transport network have been considered to again remain consistent with the original BCR value.

4.1.3 When given matching input parameters, Linsig has been shown to provide similar delay outputs to VISSIM and importantly considers delay in a similar manner to Saturn that is part of the SRTM used to inform the original scheme BCR.

4.1.4 For the existing network configuration, the level of delay on Newgate Lane East is minimal at both the priority junction with Newgate Lane (where Newgate Lane East is the priority movement except for the low flow right turn to Newgate Lane) and at the proposed site of the Toucan crossing where the current arrangement is free-flowing. This exisinf level of delay is not material when compared to the scale of delay associated to the inclusion of signals at both locations that will interrupt/ delay the flow on Newgate Lane East.

4.1.5 The SRTM flow outputs used in the update BCR calculations include for local journey purpose splits and are considered more representative than pure TAG databook values for such splits. The use of fixed values for delay per vehicle across multiple years is a simplification but is conservative and underestimates the disbenefits of the scheme.

4.1.6 The additional scheme cost has not been included in the BCR calculations and despite the additional schemes being privately funded will in fact reduce the overall benefits of the scheme further reducing the BCR.

4.1.7 I believe the revised BCR calculation is on balance conservative and demonstrates a significant impact from the proposed schemes on the existing network that should be considered as part of the planning appeal.

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Little Falls, Los Angeles, Montreal, New-York, Philadelphia, Washington

SYSTRA

Appendix A

N

24m LONG BUFF COLOURED HIGH FRICTION SURFACING ON THE APPROACH TO THE TOUCAN CROSSING

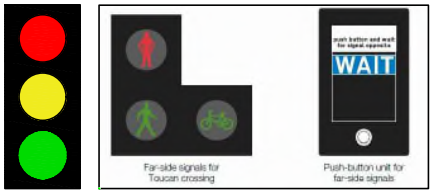
EXISTING BUFF COLOURED TACTILE PAVING TAKEN UP AND REPLACED WITH RED COLOURED TACTILE

EXISTING BUFF COLOURED TACTILE PAVING TAKEN UP AND REPLACED WITH RED COLOURED TACTILE

ALL SIGNAL POSTS ARE TO BE INSTALLED USING NAL SOCKETS

TOUCAN CROSSING TO BE MADE UP OF PRIMARY AND SECONDARY TRAFFIC SIGNAL HEADS. WITH PEDESTRIAN AND CYCLIST SIGNALS.

SIGNALS ARE TO BE CONTROLLED VIA A PUSH BUTTON UNIT AFFIXED AT AN ACCESSIBLE HEIGHT



24m LONG BUFF COLOURED HIGH FRICTION SURFACING ON THE APPROACH TO THE TOUCAN CROSSING

KEY:

- PROPOSED RED TACTILE PAVING
- PROPOSED WHITE ROAD MARKINGS
- PRIMARY SIGNAL HEAD
- SECONDARY SIGNAL HEAD
- PEDESTRIAN/CYCLIST SIGNALS
- PEDESTRIAN/CYCLIST PUSH BUTTON UNIT
- PROPOSED BUFF HIGH FRICTION SURFACING (HFS)

REV	DATE	BY	DESCRIPTION	CHK	APD

First Floor, South Wing
Equinox North
Great Park Road
Almondsbury
Bristol
BS32 4QL

01454 625945
www.pegasusgroup.co.uk
Planning | Design | Environment | Economics

Pegasus Group

CLIENT: FAREHAM LAND LP & BARGATE HOMES LTD

PROJECT: LAND TO THE NORTH OF GOSPORT RD FAREHAM

TITLE: POTENTIAL TOUCAN CROSSING POINT

SCALE @ A3:	CHECKED:	APPROVED:
1:200	LB	AJ
CAD FILE: –	DESIGN-DRAWN: ADS	DATE: 29/05/2019
PROJECT No: BRS.4989	DRAWING No: SK07	REV: –

Appendix B

From: WHITEHEAD Chris
Sent: 22 January 2021 09:21
To: Martha Hoskins <[redacted]
Cc: Dudley, Ken <[redacted]>; Tony.Jones[redacted]
Subject: RE: APP/A1720/W/20/3252180 & 3252185 - Land at Newgate Lane

Thanks Martha

Kind Regards

Chris

From: Martha Hoskins <[redacted]
Sent: 21 January 2021 17:49
To: WHITEHEAD Chris <[redacted]
Cc: Dudley, Ken <[redacted], Tony.Jones[redacted]
Subject: RE: APP/A1720/W/20/3252180 & 3252185 - Land at Newgate Lane

Evening Chris,

As promised, please find the saturation flows extracted from the VISSIM below. Please let me know if you would prefer these as an average across the two peaks and I'd be happy to provide that.

AM: Southbound- 2178 Northbound- 2150

PM: Southbound- 2205 Northbound- 2088

Using RR67 the saturation flow calculation facility in LinSig the saturation flow value for each lane is 2105. This uses the geometry measured from the approved drawing of the Toucan. The saturation flows extracted from the VISSIM therefore demonstrate a good correlation with the measured values.

If you have any other queries pertaining to the VISSIM modelling then I would be happy to discuss.

Many thanks,

Martha

Martha Hoskins
RED Wilson Associates

Mobile[redacted]
Web - https://REDwilsonassociates.co.uk

From: Martha Hoskins
Sent: 21 January 2021 15:31
To: WHITEHEAD Chris <[redacted]
Cc: Dudley, Ken <[redacted]>; Tony.Jones[redacted]
Subject: RE: APP/A1720/W/20/3252180 & 3252185 - Land at Newgate Lane

Afternoon Chris,

I hope you are well.

Yes of course, I can send over the .dis files and the outputs for the sat flows shortly.

Thanks,

Martha

Martha Hoskins
RED Wilson Associates

Mobile - [redacted]
Web - https://REDwilsonassociates.co.uk

From: WHITEHEAD Chris [redacted]
Sent: 20 January 2021 17:42
To: Martha Hoskins <[redacted]
Cc: Dudley, Ken <[redacted]>; Tony.Jones[redacted]
Subject: APP/A1720/W/20/3252180 & 3252185 - Land at Newgate Lane

Martha

HCC has provided me with Saumil Patel's Proof of Evidence with regard to the above Planning Appeal. Your Technical Note summarising the results to a VISSIM model for the proposed Toucan crossing on Newgate Lane East is included as Appendix B to that PoE. I'm aware saturation flows are not a direct input to VISSIM but they can be extracted as an output, so please can the saturation flows output from VISSIM for this assessment be provided.

Kind Regards

Chris

Appendix C

and thus it will be important to demonstrate that they are appropriate for the option being considered.

11 Reporting user benefits and transport provider impacts in the PA and TEE tables

11.1.1 Monetised benefits for transport users and private sector providers are summarised in the Transport Economic Efficiency (TEE) table. All benefits should be reported in present values and real prices, in the Department's base year, and in the market prices unit of account (see TAG Unit A1.1). Benefits should be reported as positive values and disbenefits (or costs) as negative values. The Department's appraisal software, TUBA, performs these calculations using the methods and values in this TAG Unit and the TAG Data Book and presents the results in the TEE table format.

11.1.2 User travel time, vehicle operating cost and user charge impacts should be included in the TEE table, as should user impacts during construction and maintenance (which should include both travel time and vehicle operating cost impacts). Monetised reliability impacts should not be included in the TEE table.

11.1.3 Impacts on business (including freight), commuting and other trips should be reported separately. The sub-totals for business, commuting and other indicate the distribution of gains (and, potentially, losses) from the option.

11.1.4 Benefits should be attributed to the mode and source of change as described in sections 2 and 3. For example, consider an option which reduces bus journey times with no change in fares, leading to an increase in bus demand. New bus passengers will pay fares but, as the level of fare has not changed, the net impact on both new and existing bus passengers, calculated using the rule of a half, will attribute all of the net benefit to the change in journey time. Therefore the benefits to bus passengers should be reported in the 'Travel time' row of the TEE table for each journey purpose. This means that the totals for 'User charges' (which are calculated with the rule of a half) and private sector provider 'Revenues' (which are calculated from changes in fare and demand) should not be expected to match.

11.1.5 If, in the same example, the option leads to mode switch and road decongestion, this will change both journey times and vehicle operating costs for road users. Therefore, the impacts reported in the 'Roads' column would be split between the 'Travel time' and 'Vehicle operating costs' rows.

11.1.6 Where not explicitly quantified in the modelling approach, the impacts on pedestrians, cyclists and others should be assessed using the method set out in TAG Unit A5.5 – Highway Appraisal.

11.1.7 The 'Private sector provider impacts' section of the TEE table should include estimates of changes in revenues (see section 7), operating costs and investments costs (see TAG Unit A1.2). Increases in revenue should be recorded as a positive value while costs should be recorded as a negative value in the TEE table. The disaggregation in the column headings is quite broad, meaning they include service operators' infrastructure providers. Following the decision to reclassify Network Rail as a Central Government Body[18], Network Rail spending and revenues should be considered to impact directly on the Broad Transport Budget. For example, additional operator costs reported in the TEE table need to account for track access charge payments, with the equivalent Network Rail revenues (and additional operating costs incurred by Network Rail) recorded in the Public Accounts (PA) table.

11.1.8 As discussed in TAG Unit A1.2, changes in grant or subsidy payments to private sector providers should be recorded in both the TEE and PA tables. An increase in subsidies paid to providers should be recorded as a positive value in the 'Grant/subsidy' row of the TEE table (a benefit to the

[18] http://www.ons.gov.uk/ons/dcp171766_345415.pdf

provider) and a positive value in the corresponding row of the PA table (where a positive value represents a cost to the public sector).

11.1.9 When developers make contributions, the full investment cost should be attributed to either local or central government in the PA table, with negative values recorded in the 'Developer contributions' rows of both the TEE table (to show the cost to the developer) and the PA table (to show the reduction in cost to the public sector).

11.1.10 Changes in indirect tax revenue should be reported in the 'Indirect tax revenues' row of the PA table. Indirect tax revenues will increase where total fuel consumption increases. Though in most circumstances indirect tax and fuel cost impacts should be of the same sign, there may be some rare occasions when they have a different sign. Fuel cost impacts, are calculated using the 'rule of a half'. More detail on this is given in the TUBA Manual. As indirect tax revenues accrue to the government they are perceived in the factor cost unit of account and should be converted to the market price unit of account by multiplying by (1+t), the indirect tax correction factor.

11.1.11 TAG Unit A1.1 – Cost Benefit Analysis provides guidance on how costs reported alongside other elements covered by the appraisal in the Analysis of Monetised Costs and Benefits (AMCB) table and Appraisal Summary Table (AST).

12 References

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Arup, Bates, J., Fearon, J. and Black, I. (2004): Frameworks for Modelling the Variability of Journey Times on the Highway Network. Department for Transport, UK.

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DfT, Transport Users Benefit Appraisal User Manual, TUBA User Guidance with accompanying TUBA software

EEA Division, Department of Transport (1990-91): Review of Vehicle Operating Costs in COBA.

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