Hampshire County Council

PROOF OF EVIDENCE OF NICK GAMMER IN RESPECT OF HIGHWAYS AND TRANSPORTATION

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

NOVEMBER 2020

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1. Qualifications and Experience and Scope of Evidence

1.1 My name is Nick Gammer. I have been requested by Fareham Borough Council (FBC) to provide expert witness services for the Inquiry. My evidence is given on behalf of FBC as Local Planning Authority. I hold a Transport Planning and Engineering MSc and am a Member of the Chartered Institute of Highways & Transportation and a Member of the Transport Planning Society

1.2 I am a Principal Transport Engineer at Hampshire County Council. I have been engaged in the practice of Transport Planning for 13 years, specialising in development related transport planning. I have extensive experience in development related highway proposals, regularly commenting on highways and transport matters. My experience includes a wide range of transportation schemes for various types of development proposals, including residential, retail, employment, education and mixed-use developments. For the last six and a half years I have specialised in assessing the transportation elements of strategic scale developments, in the case of housing defined as 100 units or more. During this time, I have covered at least two (occasionally up to 5) of the 11 Hampshire authorities, either commenting on, or overseeing more junior colleagues' comments on the majority of developments of a strategic scale in these areas. As such, I have considerable experience in assessing the transport impacts of development proposals of this nature and scale.

1.3 I have visited the site for the purpose of preparing my evidence and I am familiar with the local transport network and surrounding area.

Scope of Evidence

1.4 The planning applications were subject to an officer recommendation for refusal as detailed in the Officer Recommendations (CDC.1 and CDC.2). The Planning Committee resolved to refuse planning permission for both applications at the planning committee on 01/07/2020. The highway reasons for refusal relate to:

Northern application (P/18/1118/OA):

f) Insufficient information has been submitted to adequately assess the highways impacts arising from the proposed development;

g) The proposed access is inadequate to accommodate the development safely;

h) The proposed development would have an unacceptable impact on the junction of old Newgate Lane / Newgate Lane East resulting in a severe impact on the road safety and operation of the local transport network;

i) The proposed development provides insufficient support for sustainable transport options;

o) In the absence of a legal agreement to secure the submission and implementation of a full Travel Plan, payment of the Travel Plan approval and monitoring fees and the provision of a surety mechanism to ensure implementation of the Travel Plan, the proposed development would not make the necessary provision to ensure measures are in place to assist in reducing the dependency on the use of the private motorcar.

Southern Application (P/19/0460/OA):

e) Insufficient information has been submitted to adequately assess the highways impacts arising from the proposed development;

f) The proposed access is inadequate to accommodate the development safely;

g) The proposed development would have an unacceptable impact on the junction of old Newgate Lane / Newgate Lane East resulting in a severe impact on the road safety and operation of the local transport network;

h) The proposed development provides insufficient support for sustainable transport options;

o) In the absence of a legal agreement to secure the submission and implementation of a full Travel Plan, payment of the Travel Plan approval and monitoring fees and the provision of a surety mechanism to ensure implementation of the Travel Plan, the proposed development would not make the necessary provision to ensure measures are in place to assist in reducing the dependency on the use of the private motorcar.

1.5 Those reasons related to insufficient information, access, contributions and Travel Plans were capable of, and have been, addressed through liaison with the appellant. However, Reason for Refusal (h) for the northern site which corresponds to Reason (g) for the southern site cannot be resolved. This is:

- The proposed development would have an unacceptable impact on the junction of old Newgate Lane / Newgate Lane East resulting in a severe impact on the road safety and operation of the local transport network;

1.6 My evidence considers the transport related matters which are the subject of this Inquiry. My evidence considers the following:

- Relevant policy

- Site description
- Development Impact on Existing Network
- The significance of Newgate Lane East
- Mitigation Proposals

1.7 At Section 2 of my evidence I address relevant policy and accessibility guidance.

1.8 Section 3 provides a description of the site.

1.9 Section 4 considers the development impact on the existing network. This will discuss trip generation and the percentage impact of the development. I will also summarise the current operation of old Newgate Lane/ Newgate Lane East junction. Finally, I consider the forecast impact of the developments on this junction in its current form, setting out the expected queue lengths and delay for the developments individually and combined. This will help to inform evidence presented in Section 6.

1.10 Section 5 sets out the importance of Newgate Lane, particularly considering the recent improvements made in the vicinity if the application sites. This will help to inform evidence presented in Section 6.

1.11 Section 6 reviews the proposed signalisation mitigation options, namely full signalisation and signalisation with an indicative right turn arrow. I will demonstrate that both the proposed highway mitigation options for signalisation of old Newgate Lane/ Newgate Lane East junction are unacceptable and contrary to Policy CS5 part 3, DSP40 part v and paragraph 109 of NPPF, supporting RfR (h) (northern site) and RfR (g) (southern site).

1.12 My evidence at Section 6 demonstrates that the fully signalised junction operates above capacity for either site in isolation and cumulatively and that the resulting queues and the delay to vehicles using Newgate Lane East are a severe impact on the operation of the local highway network.

1.13 Evidence provided by Mr Mundy demonstrates that the indicative arrow signalisation option is unsafe and only the fully signalisation option will operate safely. However, for completeness, I show that the level of delay resulting from the indicative arrow proposal is unacceptable for either site in isolation and both sites cumulatively. The resulting delay for users of Newgate Lane East - a newly constructed and heavily trafficked section of carriageway, vital to local traffic flow

and the local economy - caused by implementation of an indicative arrow signalisation scheme is severe. I demonstrate this in support of RfR h (northern site) and RfR g (southern site).

1.14 My summary and conclusion are provided at Section 7.

1.15 Evidence provided by Ms Parker (Planning), Mr Sibbett (Ecology), Mr Dudley (Landscape) and Mr Mundy (signalisation design) addresses all other planning matters.

1.16 The evidence that I have prepared and provide for these appeals references APP/A1720/W/20/3252180 and APP/A1720/W/20/3252185 is true and I confirm that the opinions expressed are my true and professional opinions.

2. Relevant Policy

2.1 I consider below the transport policy and guidance on capacity and the operation of the local road network relevant to this development.

Transport Planning Policy

Fareham Local Development Framework Core Strategy August 2011

2.2 Development Plan policy CS5 part 3 (CDE.1) requires FBC to permit development which:

- *"Contributes and/or provides necessary and appropriate transport infrastructure;*
- *Does not adversely affect the safety and operation of the highway network or pedestrian/cycle routes; and*
- *Is designed/implemented to prioritise and encourage safe and reliable journeys by walking, cycling and public transport."*

Fareham Local Plan Part 2: Development Sites and Policies June 2015

2.3 Residential development is required to meet the criteria stated in policy DSP40 parts i. to v (CDE.2). Criteria v. does not permit proposals which would have any unacceptable traffic implications.

National Planning Policy Framework February 2019

2.4 Paragraph 108 of the National Planning Policy Framework (NPPF) February 2019 requires development proposals ensure:

- *"The promotion of sustainable transport modes;*
- *Safe and suitable access to the site for all users; and*
- *Significant impacts on the highway network or on highway safety are mitigated to an acceptable level. "*

2.5 NPPF paragraph 109 states

> *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

3. Site Description

3.1 The two sites are adjoining and are located west of Newgate Lane East. Access is provided off old Newgate Lane. A separate access is provided for each site. The site locations, access locations (green circles with arrows inside) and the location of old Newgate Lane/ Newgate Lane East junction can be seen in Figure 1 below.

Figure 1: Development Location
Source: Extracted from Illustrative Framework Masterplan – Southern Parcel, August 2019 (CDA.73)

3.2 Newgate Lane has recently been realigned and upgraded to form a new section of carriageway called Newgate Lane East. The recent realignment and upgrade of Newgate Lane makes up part of the 'Improving Access to Fareham and Gosport' strategy (Appendix NG1). The primary aim of the strategy is to stimulate the provision of employment and investment in employment opportunities within Gosport.

3.3 As part of the upgrade of Newgate Lane, the section of the previously existing Newgate Lane has recently been downgraded, with access to vehicles prohibited to the south and a new junction formed with Newgate Lane East. This section of Newgate Lane (referred to as old Newgate Lane for the purposes of this evidence) is now a cul-de-sac, with the only means of access to the wider network being via the old Newgate Lane/ Newgate Lane East junction.

3.4 Both site accesses are proposed to be taken from old Newgate Lane. As such, all development traffic will route through old Newgate Lane/ Newgate Lane East junction.

3.5 Throughout the application process only cumulative highway information regarding the impact on the operation of the highway network has been submitted, relating to both the northern application P/18/1118/OA and southern application P/19/0460/OA. Information regarding the impact of either site in isolation on the surrounding highway network was not provided until 19th October 2020, less than 2 weeks before the deadline for submission of this Proof of Evidence; I have nevertheless considered this information in my evidence as set out below.

3.6 When considering site location in term of distances to local facilities, the Highway Authority considers whether distances represent a barrier to sustainable mode use, taken in this context as walking, non-motorised vehicle use such as cycles and scooters and public transport. That is, whether there are acceptable sustainable transport infrastructure and measures and if this, in combination with the distances to local facilities, results in a severe impact in terms of highway safety and capacity with reference to National Planning Policy Framework Paragraph (NPPF) paragraph 109 and local policy, in this case Fareham Borough Council's Local Plan Part 2: Development Sites and Policies, June 2015 (CDE.2) policy DSP40(v) and policy CS5 Part 2 in Fareham Local Development Framework – Core Strategy, August 2011(CDE.1). Consideration by the Highway Authority is given to NPPF Paragraph 108, but only in the context of assessing whether this leads to a severe impact under NPPF paragraph 109.

3.7 The role of the Highway Authority differs from that of the Local Planning Authority, who consider whether the sites are located in an accessible area in accordance with the test in DSP40(ii), CS5 Part 1 and NPPF paragraph 108. The Highway Authority do not consider the amenity impact of the distance to local facilities, whether a site is well related to existing urban settlement boundaries or if is well integrated with neighbouring settlements. These

matters are considered by the Local Planning Authority independent of highway considerations.

3.8 In my responses dated 4th June 2020 (CDB.2d and CDB.7d) I confirmed that that the sites have suitable sustainable modes access subject to the provision of acceptable S106 contributions and a north – south pedestrian and cycle link through the sites linking to Woodcote Lane. By this I mean, unlike the impact which the development would have on the junction of old Newgate Lane/ Newgate Lane East, that the distances to local facilities do not result in an unacceptable impact on highway safety or a residual cumulative impact on the highway network which would be severe. Now that an individual site assessment has been provided, I can confirm that this is also the case for the northern site in isolation. The S106 contributions have been agreed with the appellant and are considered acceptable. In coming to this view, I was not considering CS5 part 1, DSP40(ii) and was only considering NPPF Paragraph 108 in the context of assessing whether this leads to a severe impact under NPPF paragraph 109. Through the provision of suitable S106 contributions and Travel Plans for both sites, I am comfortable the tests in NPPF Paragraph 109, DSP40(v) and CS5 Part 2 have been met and that there will be no adverse effects on safety and no unacceptable impact on the road network such that its operation would be affected by virtue of inadequate provision for sustainable transport modes.

4. Development Impact on Existing Network

Trip Generation and Proportional Development Traffic Impact

4.1 To ascertain whether the developments would have an unacceptable impact on the junction of old Newgate Lane/ Newgate Lane East, it is necessary is to calculate trip generation and proportional development traffic impact, as set out below. The proportional increase in traffic using old Newgate Lane due to the proposed developments is significant. While this is not a reason for refusal in itself, it provides useful context supporting the reasons the proposed signalisation of old Newgate Lane/ Newgate Lane East is unacceptable. The appellant agrees that the impact of either of the developments in isolation and combined have an unacceptable impact on the existing junction of old Newgate Lane/ Newgate Lane East.

4.2 The vehicular trips generated by the proposed development have been forecast using the TRICs database. The assessment of the operation of the existing junction and the proposed improvements are based on a TRICs forecast assuming that 100% of the proposed developments will be privately owned housing with no discount for affordable housing (which generates less trips) and no reduction in forecast trip generation due to Travel Plan measures. This is considered a robust assessment.

4.3 Trip rates were proposed in the originally submitted Transport Assessments (CDA.57 and CDA.128) and agreed as acceptable by the Highway Authority. Assessments of junction performance has been based on this agreed trip generation. However, the appellant subsequently stated (Transport Technical Note Newgate Lane and Newgate Lane East Junction, June 2019 (CDA.58 and CDA.129)) that the above methodology, resulting trip generation shown in table 1 below, is overly robust. The appellant has suggested the following reductions to trip generation should be made; I have set out why, for a robust assessment, the trip generation originally agreed with the appellant shown in Table 1 below is appropriate.

- 40% of dwellings should be considered as affordable housing. Using the TRICs database, affordable housing generates a lower number of trips than private housing and would reduce the trip generation shown in Table 1; for example the trips generated by the combined developments fall by 19 in both the AM and PM peaks. I

believe that for a robust assessment trip generation should be based upon 100% private dwellings; while a proportion of affordable housing (40% in this case) is secured via S106 Agreement, as a development progresses it is not unusual, often due to viability issues, for this proportion to be reduced. Originally the appellant proposed this and all assessments are based on 100% private dwellings. They have subsequently changed their stance; however, my professional view is that they are not correct to do so.

- A 10% reduction in forecast trip generation, to account for reductions in car trips as a result of the Travel Plan. In my opinion, the Travel Plan targets are aspirational and do not guarantee that private car trips will be reduced by 10%. Nor does a Travel Plan obligate any party to achieve a 10% reduction in car trips, but rather to make best endeavours to achieve the agreed reduction target. For a robust assessment, no trip generation reduction is acceptable due to the implementation of a Travel Plan.

4.4 I believe the forecast trip generation shown in Table 1 below are appropriate for a robust assessment in line with best practice. Regardless, I do not believe these suggested reductions to forecast trip generation would have a material impact on my conclusions.

4.5 The forecast trip generation is calculated by multiplying the number of proposed dwellings by the trip rates (presented by the appellant as 0.565 AM and 0.629 PM) generated from the TRICs database. Table 1 below shows the forecast trip generation of each development in isolation and combined.

	Trip Generation	
	AM Trips	**PM Trips**
North and south sites combined (190 dwellings)	107	120
Northern site (75 dwellings)	42	47
Southern site (115 dwellings)	65	72

Table 1: Trip Generation
Source: Calculated from agreed trip rates

4.6 The forecast future year traffic flows excluding development traffic on old Newgate Lane are shown in Table 2 below.

Future Trips, No Development	
AM Trips	**PM Trips**
95	105

Table 2: Future trips old Newgate Lane, no development
Source: Transport Technical Note, June 2019 (CDA.58 and CDA.129)

4.7 The proposed developments combined represent a 112.6% and 114.3% increase in vehicular traffic using the old Newgate Lane at the junction with Newgate Lane East in the AM and PM peaks respectively in the future year of 2024.

4.8 The northern site in isolation represents a 44.2% and 44.8% increase in vehicular traffic using the old Newgate Lane at the junction with Newgate Lane East in the AM and PM peaks respectively in the future year of 2024.

4.9 The southern site in isolation represents a 68.4% and 68.6% increase in vehicular traffic using the old Newgate Lane at the junction with Newgate Lane East in the AM and PM peaks respectively in the future year of 2024.

4.10 Given old Newgate Lane is a cul-de-sac, all existing and development traffic must route via old Newgate Lane/ Newgate Lane East Junction to access and egress the existing uses and the proposed developments on old Newgate Lane.

Current operation of old Newgate Lane/ Newgate Lane East Junction

4.11 On site observations and video surveys show the existing junction with current traffic levels to operate with little queuing or delay when entering and egressing old Newgate Lane.

4.12 VISSIM modelling has been carried out on the existing layout with existing traffic for the base year of 2019 (VISSIM Modelling FB and Opt3, October 2020 (CDA.70 and CDA.141) forecasting the delay for vehicles entering and egressing old Newgate Lane. This supports the above as shown in Table 3 below.

Movement	Delay per Vehicle (Seconds)
AM	
Newgate Lane East (southbound) to Old Newgate Lane (westbound, right)	36
Old Newgate Lane to Newgate Lane East (northbound, left)	28
Old Newgate Lane to Newgate Lane East (southbound, right)	51
PM	
Newgate Lane East (southbound) to Old Newgate Lane (westbound, right)	7
Old Newgate Lane to Newgate Lane East (northbound, left)	3
Old Newgate Lane to Newgate Lane East (southbound, right)	24

Table 3: Existing AM and PM peak delay entering and egressing old Newgate Lane.
Source: VISSIM Modelling FB and Opt3 (CDA. 70 and CDA. 141)

4.13 Currently northbound and southbound ahead/ through traffic on Newgate Lane East (that is, vehicles travelling through this junction without turning into old Newgate Lane) does not have to give way to any opposing traffic. Therefore, there is currently minimal delay under the existing junction arrangement for through traffic on Newgate Lane East; the delay for northbound vehicles is 3.5 second per vehicle and for southbound traffic of 1.5 seconds per vehicle in the AM peak. The delay is caused by slight speed reductions as vehicles slow to turn left into old Newgate Lane for north bound traffic (an unopposed movement) or southbound vehicles slowing to enter the right turn lane to access old Newgate Lane (again, an unopposed movement in terms of removing vehicles from blocking Newgate Lane East southbound through traffic).

Development Traffic Impact on old Newgate Lane/ Newgate Lane East Junction (existing layout)

4.14 In the future year of 2024, including development traffic, the operation of the existing junction is poor in relation to vehicles egressing old Newgate Lane in the AM peak hour.

4.15 Table 4 below shows the queue lengths are forecast to increase on egressing old Newgate Lane from 18 meters (3 cars) with no development to 42 meters (7 cars) with the northern development in isolation, 69 meters (12 cars) with the southern development in isolation and 123 meters (21 cars) with both developments combined; an increase in queue length of 4 cars, 9 cars and 19 cars respectively. Queues resulting from the southern and combined developments would block back over the junction of the realigned Newgate Lane

spur and old Newgate Lane. The right turn movement from Newgate Lane East (southbound traffic) to old Newgate Lane is also forecast to experience an increase in queue length of 1 car with the northern development in isolation, 2 cars with the southern development in isolation and 3 cars with both developments combined.

	Future Base	75 Dwellings	115 Dwellings	190 Dwellings
AM				
Newgate Lane Left Turn out	20	35	51	112
Newgate Lane Right Turn out	18	42	69	123
Newgate Lane East Right Turn in	17	21	25	34
PM				
Newgate Lane Left Turn out	9	11	13	14
Newgate Lane Right Turn out	10	13	13	17
Newgate Lane East Right Turn in	11	12	14	16

Table 4: Future Base Maximum Queue Length Results (meters)
Source: VISSIM Modelling FB and Opt3 (CDA. 70 and CDA. 141)

4.16 Table 5 below shows the AM peak hour delay of each vehicle is forecast to increase on egressing old Newgate Lane from 49 seconds with no development to 69 seconds with the northern development in isolation, 98 seconds with the southern development in isolation and 161 seconds with both developments combined when turning right from old Newgate Lane (southbound); an increase in delay of 20 seconds, 49 seconds and 112 seconds respectively. The increase in delay when turning left from old Newgate Lane to Newgate Lane East is also substantial, with increases of 10 seconds, 26 seconds and 82 seconds. The right turn movement from Newgate Lane East (southbound traffic) to old Newgate Lane also experiences an increase in delay of 6 second with the northern development, 11 seconds with the southern development and 21 seconds with both developments combined.

	Future Base	75 Dwellings	115 Dwellings	190 Dwellings
AM				
North to West	37	43	48	58
North to South	1	1	1	2
West to South	49	69	98	161
West to North	31	41	57	113
South to North	4	4	4	4
South to West	3	3	3	3
PM				
North to West	5	5	6	7
North to South	2	2	2	2
West to South	8	9	10	11
West to North	4	4	4	5
South to North	2	2	2	2
South to West	2	2	2	2

Table 5: Future Base Layout Average Lights Vehicle Delay (seconds)
Source: VISSIM Modelling FB and Opt3 (CDA. 70 and CDA. 141)

4.17 Given the above, showing significant delay for those egressing old Newgate Lane, both myself and the appellant agree that the proposed developments, both in isolation or combined, will have an unacceptable adverse impact on vehicles exiting Newgate Lane and improvements to the old Newgate Lane/ Newgate Lane East junction are required to accommodate the proposed development. The proposed signalisation improvement scheme is reviewed in Section 6 below.

5. The Significance of Newgate Lane East

5.1 The B3385 Newgate Lane corridor is one of three main arterial routes that provide road access between Fareham and Gosport and the M27 strategic road network. Newgate Lane East currently carries approximately 25,000 vehicles a day. The recent realignment and upgrade of Newgate Lane created a new 1.5km eastern alignment for the B3385 Newgate Lane southern section from Tanners Lane to Peel Common Roundabout and opened to traffic April 2018. This formed a wider, higher standard route, with fewer side roads and driveway accesses, allowing traffic to flow more smoothly and providing improvements to journey times and delay reduction. This was provided in conjunction with an upgrade Peel Common roundabout to a signal-controlled roundabout to provide additional lane capacity, as a package of improvements. The business case for the improvement package (Peel Common Roundabout / B3385 Newgate Lane South, TRANSPORT BUSINESS CASE, January 2015, Para 2.13.10 (CDH.14)) states the following:

> *"The scheme supports a wider package of proposed transport improvement measures to improve access to Fareham and Gosport. The need to improve access to the Gosport and Fareham peninsula is a key priority for the Solent LEP in order to remove transport barriers to economic growth and to help encourage new investment and development into the area. A package of measures has been identified to help address the issues (including this proposed scheme), to help improve access to Gosport and facilitate economic growth in the area. Improving accessibility in the area will have a positive impact upon the local economy and important strategic sites including the Solent Enterprise Zone."*

5.2 The new infrastructure package provides increased capacity in a previously heavily congested area and links the Strategic Road Network and Fareham Rail Station to the Gosport Peninsula, including Solent Enterprise Zone at Daedalus. These improvements form one part of the Fareham and Gosport Strategic Transport Infrastructure Plan (appendix NG1) developed by HCC, which is a comprehensive package of schemes that work together to reduce congestion and improve journey times on key routes in the Fareham and Gosport area. The schemes to improve the Newgate Lane corridor form the main tenet of improving the easterly access between the Gosport peninsula and the Strategic Road Network at M27 Junction 11, with the Stubbington Bypass and A27 dualling focused on improving the westerly access between Gosport peninsula and the Strategic Road Network at M27 Junction 9. Any additional delay on Newgate Lane will directly impact upon the designated main easterly access route to/from the Gosport Peninsula.

5.3 Funding for the infrastructure was largely provided by Solent Local Enterprise Partnership (Solent LEP), providing £9 million of the £9.515 million scheme cost, and was awarded on the basis of a transport business case, which relied on a Benefit/Cost Ratio (BCR) analysis to inform the economic case for the scheme. The benefit/cost analysis of the scheme was undertaken in accordance with TAG guidance using the Solent Sub-Regional Transport Model; the outputs from this appraisal are summarised in Appendix F of the Peel Common Roundabout / B3385 Newgate Lane South, TRANSPORT BUSINESS CASE, January 2015 ().

5.4 The strategic case for upgrading Newgate Lane was based on development of identified brownfield regeneration sites in the Gosport Peninsula (such as the Solent Enterprise Zone at Daedalus airfield) and not development of greenfield sites along the Newgate Lane corridor.

5.5 In terms of the scheme benefits, these are largely accrued from peak hour journey time savings as demonstrated by the following extracts from Peel Common Roundabout / B3385 Newgate Lane South, TRANSPORT BUSINESS CASE, January 2015 (CDH. 14):

> *"3.2.1 Scheme benefits are largely derived from travel time savings as a result of the infrastructure improvements delivering capacity/ operational improvements. "*
>
> *"3.6.13 As with DS1, the vast majority of benefits accrue from journey time savings, which are felt by both private road users and public transport passengers. This results from the increased capacity provided at the Peel Common Roundabout junction and the improved operation under signal control, plus further benefits produced by the increased capacity associated with the new Newgate Lane alignment."*

And the below extract from Peel Common Roundabout / B3385 Newgate Lane South, TRANSPORT BUSINESS CASE (January 2015), Appendix E, appraisal Summary Table DS2b (CDH. 14a) in the 'Summary of Key Impacts' Column:

"Economy Benefits from journey time savings for business users due to increased capacity and reduction in delays. Reduction in travel times in peak periods on the B3385 Newgate Lane to / from Gosport, particularly in the southbound in the PM peak"

The journey time savings are highest in the peak hours and are as a result of the increased capacity associated with the new Newgate Lane East realignment and the increased capacity provided at the Peel Common Roundabout junction. Given the benefits are largely based on peak hour journey time savings, increasing delay in the peak hours would have a significant impact on the benefits and therefore the BCR Value. This would in turn impact the value for

money criteria by which Solent LEP funding was awarded. Funding was awarded on a BCR of 1.88, which represents medium value for money.

5.6 To quantify the impact the proposed developments are forecast to have, the reductions in journey time anticipated for the recently completed Newgate Lane improvement package, including Peel Common Roundabout and the realigned section of Newgate Lane are given below (Table 2-13, Peel Common Roundabout / B3385 Newgate Lane South, TRANSPORT BUSINESS CASE, January 2015 (CDH. 14):

- AM peak (2036 future year) - 35 seconds per vehicle northbound and 37 seconds per vehicle southbound.
- PM Peak (2036 Future Year) - 7 seconds per vehicle northbound and 79 seconds per vehicle southbound.

5.7 Table 6 below summarises the delay caused by each signalisation option in the AM peak (as set out in detailed in sections 6 below) in comparison to the journey time savings resulting from the Newgate Lane and Peel Common Roundabout improvement schemes.

	Delay per Vehicle - total Newgate Lane East northbound and southbound (seconds)			Journey Time Savings
	75 dwellings	115 dwellings	190 Dwellings	Journey Time Savings (seconds)
	AM			
Full signalisation appellant modelling	47.3	48	49.6	72
Full signalisation HA modelling	83.9	85.4	88.2	72
Indictive arrow appellant modelling	17.2	17.7	18.4	72
Indicative arrow HA modelling	17.8	18.3	19.2	72
	Delay Including Toucan Crossing (15.9 seconds)			
Full signalisation appellant modelling	63.2	63.9	65.5	72
Full signalisation HA modelling	99.8	101.3	104.1	72
Indictive arrow appellant modelling	33.1	33.6	34.3	72
Indicative arrow HA modelling	33.7	24.2	35.1	72
PM				
Full signalisation appellant modelling	14.6	15	15.6	86
Full signalisation HA modelling	14.6	15	15.6	86
Indictive arrow appellant modelling	8.7	8.7	8.7	86
Indicative arrow HA modelling	8.7	8.7	8.7	86
	Delay Including Toucan Crossing (114.2 seconds)			
Full signalisation appellant modelling	128.8	129.2	129.9	86
Full signalisation HA modelling	128.8	129.2	129.9	86
Indictive arrow appellant modelling	122.9	122.9	122.9	86
Indicative arrow HA modelling	122.9	122.9	122.9	86

Table 6: Comparison of delay due to signalisation proposals with journey time savings due to Newgate Lane East and Peel Common Roundabout improvements.
Source: Peel Common Roundabout / B3385 Newgate Lane South, TRANSPORT BUSINESS CASE, January 2015 (CDH. 14), Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142), HA modelling. HA Modelling Fully Signalised, October 2020 (appendix NG2)

5.8 As can be seen, 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, (depending on development quantum, modelling parameters and signalisation arrangements, as set out in Section 6 below) has a very substantial impact on the journey time savings under all scenarios and would substantially reduce the benefits of the improvements. In the AM and

PM peaks, full signalisation using the corrected HA modelling, 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 using the corrected HA modelling 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.

5.9 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.

5.10 Given the above, the increases in delay set out in Section 6 below 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 my 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.

6. Mitigation Proposals

6.1 Separate evidence has been provided by Jonathan Mundy regarding the suitability of the modelling of the proposed signalisation of old Newgate Lane/ Newgate Lane East. The principle matters of disagreement are:

1. The acceptability of use of an indicative arrow leading to a gap accepting right turn movement for southbound traffic on Newgate Lane East to old Newgate Lane; this is unacceptable to the Highway Authority on safety grounds as vehicles in the offside northbound lane may obstruct the visibility to vehicles in the near side lane, leading to an unacceptable risk of collisions with southbound vehicles turning right into old Newgate Lane. Evidence of this unacceptable safety risk is based on road safety records at nearby traffic signal junctions demonstrating historic accident patterns associated with this form of junction arrangement and the significant safety improvements of fully signalising the right turn movement, design practice adopted by other Local Authorities and the Stage 1 Road Safety Audit, which raises the separately signalised right turn movement as a problem and recommends the junction should incorporate a separately signalled right-turn into Newgate Lane. Only a fully signalised separate right turn phase, appearing when all conflicting traffic movements are stopped at red, therefore eliminating the give way right turn movement, is acceptable.
2. The Linsig model has been based on a traffic distribution of 70% of ahead traffic using the main lane (offside) and 30% of ahead traffic using the flared lane (nearside) on the Newgate Lane East northbound approach. This traffic distribution is incorrect for the AM peak hour based on data collected from similar sites, supported by published papers. The correct distribution is 72.8% in the nearside lane and 27.2% in the offside lane. Use of a 70% nearside/ 30% offside lane split underestimates the resultant queuing and delay on Newgate Lane northbound for both the fully signalised and indicative arrow design options presented by the appellant.
3. Through lane designation. The appellant modelling has used the northbound offside lane as the main lane through the junction, with the northbound nearside lane merging from the left into this on exit. The operation of most junctions, including those observed for the purposes of Mr Mundy's evidence, has the nearside lane as the main through lane with the offside lane merging into this when vehicles exit the junction. The latest junction design provided, drawing BRS.4989 AHJ/1v Rev –, does not preclude vehicles using the nearside lane as the main through lane. It is believed

this is the way drivers will behave and as such the Highway Authority modelling amends this so the nearside lane is the main through lane with vehicles merging from the from the right (offside) lane on the northbound exit of the junction.

6.2 The Highway Authority (HA) has carried out modelling correcting points 2 and 3 above for both the fully signalised and indicative arrow arrangements. The vehicular input flows (excluding lane distribution as described above) are acceptable and are identical in the HA and appellant modelling. The Highway Authority's position, supported by evidence from Jonathan Mundy, is that only a fully signalised right turn movement is acceptable; however, for completeness, my evidence demonstrates that an indicative arrow arrangement would also have an unacceptable impact on the operation of the network. I address the capacity implications of both proposed design options below.

Fully Signalised Junction Operation

Fully Signalised Appellant Modelling Results

6.3 The appellant's modelling of this option, using the inaccurate 70% nearside/ 30% offside lane split, forecast the old Newgate Lane arm of the junction to be above the 90% Degree of Saturation (DoS) for both developments in isolation and when combined. DoS is the ratio of the traffic flow to capacity for a specific junction arm, expressed as a percentage. The widely recognised maximum acceptable Degree of Saturation is 90% for a traffic signal lane. This to avoid significant performance issues on the lane which occur above this value. When the Degree of Saturation is in the range of 90-105% the queue may randomly clear on some cycles and not clear on other cycles leaving a residual queue.

6.4 The northern and southern developments in isolation both result in a DoS of 98.4% and when combined the DoS is 98.6%. The Practical Reserve Capacity (PRC) is related to the DoS and indicates the capacity the junction as a whole is operating at; a positive PCR indicates the junction has spare capacity, while a negative value indicates the junction is over capacity and is suffering from congestion. The PRC in the appellant's modelling is -9.3, -9.4 for the northern and southern developments in isolation respectively and -9.5 for the developments combined. As such, the junction is considered over capacity. This is reflected in the forecast delay per vehicle (seconds) and maximum queue lengths (PCUs) set out in

tables 7 and 8 respectively below. Please note, in the tables below, old Newgate Lane is simply referred to as 'Newgate Lane'.

6.5 Traffic modelling software frequently uses PCUs; this is a common unit representing general traffic. Common vehicle types are assigned a conversion factor so that an equivalent PCU factor can be generated. For example, a car or light goods vehicle is 1 PCU and an HGV is 2 PCUs (WebTAG Unit M3.1). I have used a PCU length of 5.75 meters.

	75 Dwellings	115 Dwellings	190 Dwellings
AM			
Newgate Lane East Northbound	57.1	57.3	58.3
Newgate Lane East Southbound	5.3	5.3	5.3
Newgate Lane	1.9	2.6	3.9
PM			
Newgate Lane East Northbound	8.9	8.9	9
Newgate Lane East Southbound	9.9	10	10
Newgate Lane	1.8	2	2.6

Table 7: Fully Signalised Maximum Queue Lengths (PCUs) AM Peak, Appellant Modelling
Source: Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

	75 Dwellings	115 Dwellings	190 Dwellings
AM			
Newgate Lane East Northbound	41.1	41.5	42.4
Newgate Lane East Southbound	6.2	6.5	7.2
Newgate Lane	68	72.6	85.7
PM			
Newgate Lane East Northbound	8	8	8
Newgate Lane East Southbound	6.6	7	7.6
Newgate Lane	68.0	69.6	73.9

Table 8: Fully Signalised Delay per Vehicle (seconds), Appellant Modelling
Source: Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

6.6 Excessive queuing is forecast for northbound traffic on Newgate Lane East, with queue lengths of 57.1 PCUs (328m), 57.3 PCUs (329m) and 58.3 PCUs (335m) for the northern, southern and combined developments respectively in the AM peak. This can be seen on Figure 2 below. Delay is also significant for Newgate Lane East northbound traffic in the AM peak forecast as 41.1 seconds, 41.5 seconds and 42.4 seconds for the northern, southern and combined developments respectively.

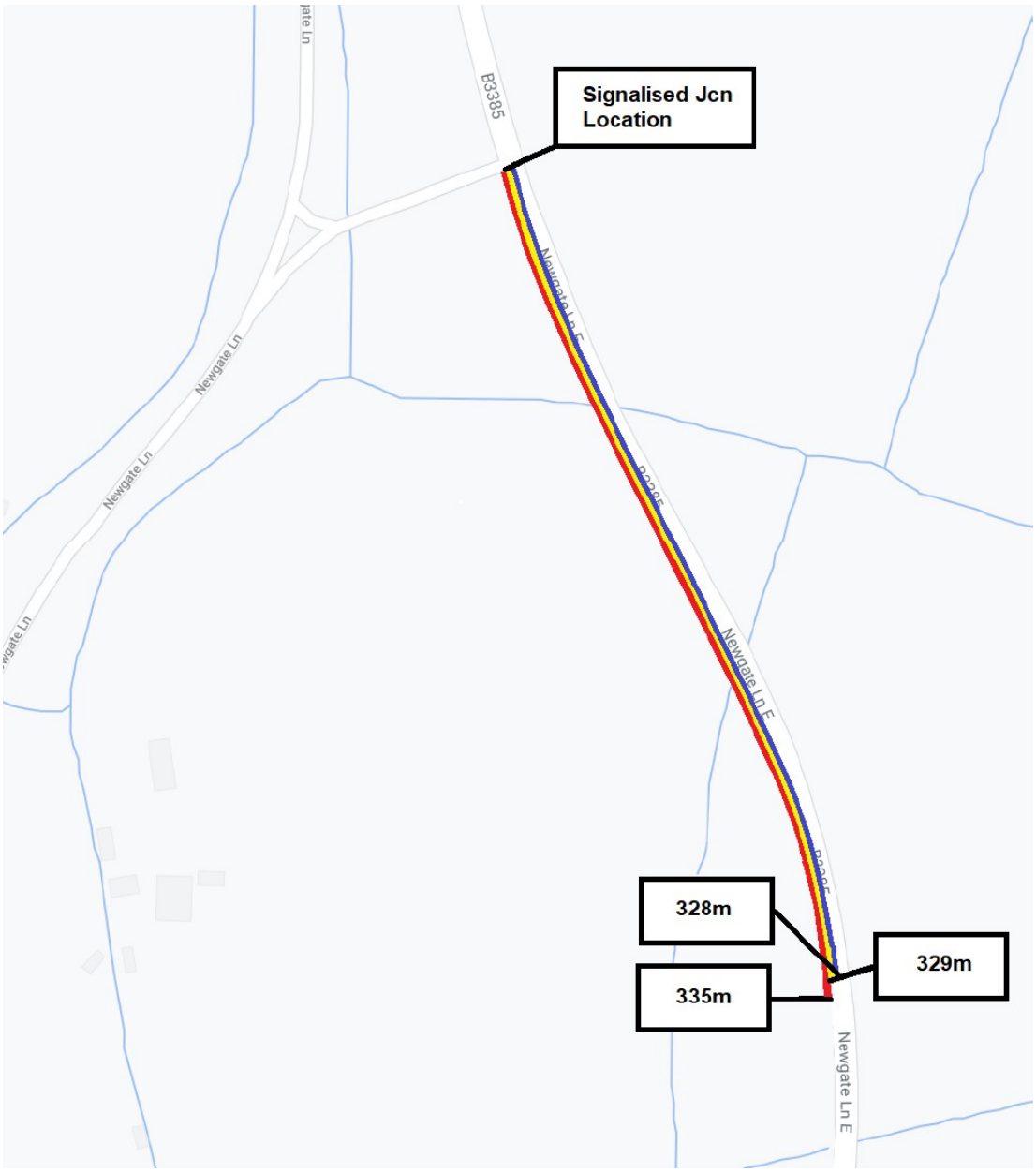

Figure 2: Fully Signalised Maximum Queue Lengths (PCUs) AM Peak, Appellant Modelling
Source: Extracted from Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

6.7 It is noted that queues on Newgate Lane East northbound in the AM peak do not clear every cycle; that is, a driver joining the back of the queue may not be able to clear the stop line on the first green signal. This is symptomatic of the junction being over capacity and is reflected in the substantial queue lengths and delay set out above.

6.8 Currently, north and south bound traffic on Newgate Lane through this junction experiences free flow conditions with no delay beyond slight speed deductions as vehicles slow to turn into old Newgate Lane for north bound traffic (an unopposed movement) or southbound

traffic slowing to enter the right turn lane (again, an unopposed movement). The introduction of additional queue lengths of over 300m and delay of over 40 seconds for northbound traffic on the newly constructed and vital infrastructure of Newgate Lane East are unacceptable and represent a severe impact on the highway network under paragraph 109 of NPPF.

6.9 Similarly, delay when egressing old Newgate Lane is significant, forecast as 68 seconds, 72.6 seconds and 85.7 seconds for the northern, southern and combined developments respectively in the AM peak with similar order values in the PM peak. The current delay (existing junction and traffic flows) forecast by the appellant's VISSIM modelling is 28 seconds when turning left out of old Newgate Lane onto Newgate Lane East and 51 seconds when turning right (see Table 3 for full existing delay). As such the proposed signalisation scheme does not mitigate the development impact on the old Newgate Lane arm of the junction.

Fully Signalised Highway Authority Modelling Results

6.10 Modelling has been carried out by the Highway Authority using the correct distribution of 72.8% nearside/ 27.2% offside lane split and the correct through lane designation. This forecasts a worse junction operation, with the junction further over capacity for all development quantum's than the appellant's modelling. The northern and southern developments in isolation result in a DoS of 100.8% and 100.9% respectively and when combined the DoS is 101.2%. The PRC values for the junction as a whole is -12 and -12.2 for the northern and southern developments in isolation respectively and -12.4 for the developments combined. This is reflected in the forecast delay per vehicle (seconds) and maximum queue lengths (PCUs) set out in tables 9 and 10 below.

	75 dwellings	115 dwellings	190 dwellings
AM			
Newgate Lane East northbound	79.1	81.2	82.9
Newgate Lane East southbound	5.3	5.3	5.3
Old Newgate Lane	1.9	2.6	3.9
PM			
Newgate Lane East northbound	8.9	8.9	9
Newgate Lane East southbound	9.9	10	10
Old Newgate Lane	1.8	2	2.6

Table 9: Fully signalised Maximum Queue Length (PCUs), HA Modelling
Source: HA Modelling Fully Signalised, October 2020 (Appendix NG2)

	75 dwellings	115 dwellings	190 dwellings
AM			
Newgate Lane East northbound	64.3	66	68.5
Newgate Lane East southbound	6.2	6.5	7.2
Old Newgate Lane	68.0	72.6	85.7
PM			
Newgate Lane East northbound	8	8	8
Newgate Lane East southbound	6.6	7	7.6
Old Newgate Lane	68	69.6	73.9

Table 10: Fully signalised Delay per Vehicle (seconds)
Source: HA Modelling Fully Signalised, October 2020 (Appendix NG2)

Greater queuing is forecast for northbound traffic on Newgate Lane East, with queue lengths of 78.6 PCUs (452m), 80.1 PCUs (461m) and 82.9 PCUs (477m) for the northern, southern and combined developments respectively in the AM peak. These can be seen on Figure 3 below. Delay is also significant for Newgate Lane East southbound traffic in the AM peak, forecast as 64.2 seconds, 65.1 second and 68.7 seconds per vehicle for the northern, southern and combined developments respectively. Figure 3 below shows the maximum queue lengths for each scenario in the AM Peak.

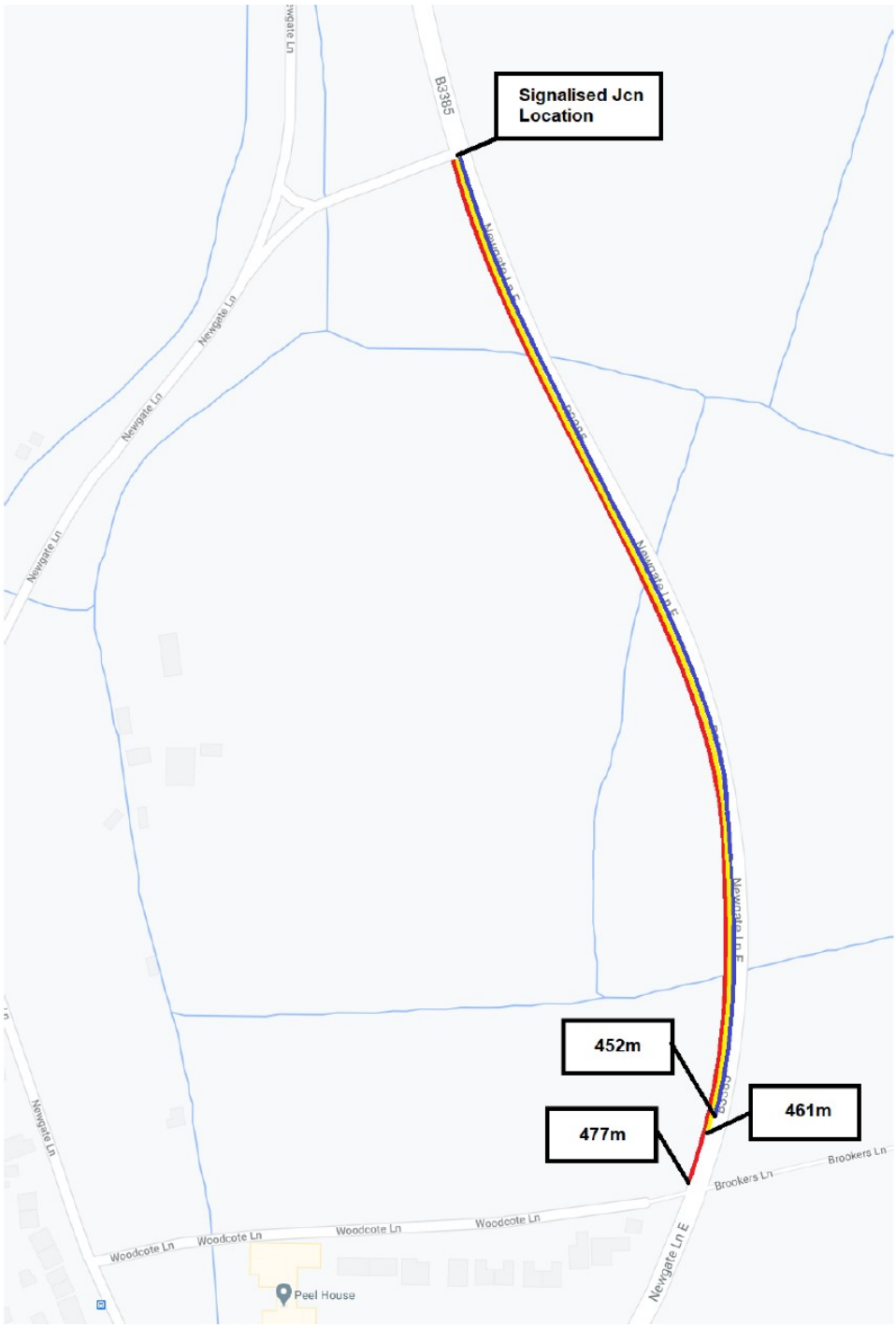

Figure 3: Fully signalised Maximum Queue Length (PCUs) AM peak, HA Modelling
Source: Extracted from HA Modelling Fully Signalised, October 2020 (Appendix NG2)

6.11 As with the appellants assessment, queues on Newgate Lane East northbound in the AM peak do not clear every cycle.

6.12 The introduction of additional queue lengths of approaching half a kilometre and delay of over a minute for northbound traffic on the newly constructed and vital infrastructure of Newgate Lane East are unacceptable and represent a severe impact on the highway network under paragraph 109 of NPPF, for either development in isolation or for the developments combined. This is afforded extra weight given the significant detrimental impact on the benefits generated by the recent improvements to Newgate Lane and Peel Common Roundabout as set out in Section 5.

Fully Signalised Cumulative Delay

6.13 As stated above, Newgate Lane East currently has unopposed flow through the junction of old Newgate Lane/ Newgate Lane East and signalisation will result in both northbound and southbound traffic being stopped to allow vehicles to enter and egress old Newgate Lane. Cumulative delay over the AM peak hour has been extracted from both the appellant and HA LinSig modelling outputs. The cumulative additional delay to vehicles in hours of delay in the AM peak hour due to the introduction of the full signalisation scheme for each development quantum is shown in the Table 11 below. Results are show for both the Highway Authority and developer modelling.

	75 Dwellings		**115 Dwellings**		**190 Dwellings**	
AM						
Lane Split	**Appellant**	**HA**	**Appellant**	**HA**	**Appellant**	**HA**
Newgate Lane East Northbound	19.1	29.9	19.3	30.7	19.8	32.0
Newgate Lane East Southbound	1.2	1.2	1.3	1.3	1.5	1.5
Total AM peak hour delay	20.3	31.1	20.6	32	21.3	33.5

Table 11: Fully Signalised Additional peak hour delay on Newgate Lane East (hours)
Source: HA Modelling Fully Signalised, October 2020 (Appendix NG2) and Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

6.14 The appellant's modelling shows the introduction of a fully signalised scheme at this location adds over 20 hours of delay cumulatively in the AM peak for the developments in

isolation or combined. The corrected HA modelling shows in excess of 30 hours cumulative delay in the AM peak alone. This supports my conclusion above, that the forecast level of delay is unacceptable and represent a severe impact on the highway network.

6.15 Furthermore, the signals will operate at all hours of day and night, causing delay to traffic on Newgate Lane East 24 hours a day. Calculation of the daily delay would require 24-hour vehicle surveys and further modelling, which has not been possible, however, the cumulative delay over a day will be considerably higher than the single AM peak hour delay shown in Table 11 above.

6.16 As set out in Section 5, Newgate Lane has recently been upgraded and is a vital piece of local highway. The cumulative peak hour delay set out above either considering the developer's modelling or the Highway Authority, is considered an unacceptable and severe impact on the local highway network under paragraph 109 of NPPF for either of the developments in isolation or combined.

Fully Signalised Comparative Delay

6.17 A further tool for considering the severity of the delay caused by signalisation is to consider it against other proposals that have been agreed as unacceptable. A number of improvement options at the old Newgate Lane/ Newgate Lane East junction were explored by the appellant in attempts to achieve acceptable junction operation with development traffic. One option was a single lane duelling scheme, widening Newgate Lane East carriageway to provide a large, formal right turn pocket for vehicles egressing old Newgate Lane. The appellant concluded that

'Improvements to the priority junction without controlling the northbound flow will not suffice to mitigate the impact of the development.' (Paragraph 4.9, RWA Future Base / Future Proposed Model Supporting Note, October 2020).

As such, this option was not progressed by the appellant as it led to an unacceptable increase in delay. I shared this view.

6.18 Table 12 below is a comparison of the AM peak delay caused by the single lane duelling scheme, showing the total average delay per vehicle across all arms of the junction and the delay for the junction as a whole forecast due to the fully signalised scheme.

	75 Dwellings		**115 Dwellings**		**190 Dwellings**	
AM						
	Appellant	**HA**	**Appellant**	**HA**	**Appellant**	**HA**
Delay, Signalisation	31.9	47.5	32.7	49.1	34.6	51.9
Delay, Single Lane Duelling	5.57		6.70		10.63	
Difference	26.33	41.93	26.0	42.4	23.97	41.27

Table 12: Fully Signalised and Single Lane Duelling Average Delay per Vehicle (seconds) comparison, AM Peak
Source: Newgate Lane VISSIM comparison, October 2020 (CDH. 17), HA Modelling Fully Signalised, October 2020 (Appendix NG2) and Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

6.19 As can be seen, the delay per vehicle across the junction as a whole is considerably higher for the proposed signalisation scheme. The Single Lane Duelling scheme was rejected as delay was unacceptable; it therefore follows that the delay caused by the proposed signalisation scheme, being at least 3 times great in all scenarios, should also be considered unacceptable.

6.20 The single lane duelling scheme resulted in substantial delay on the old Newgate Lane arm in particular; this is referenced, although not specifically stated as the reason the scheme was not progress by the appellant. However, I believe it is prudent to look at the delay for all users of the junction across all arms; considering the junction in this way demonstrates a greater aggregate delay to vehicles resulting from the signalisation scheme and supports my conclusion that full signalisation is unacceptable.

Indicative Arrow Junction Operation

6.21 The Highway Authority's position, supported by evidence from Jonathan Mundy, is that the indictive arrow signalisation arrangement is unsafe and only a fully signalised right turn movement is acceptable. However, for completeness, I have in this section reviewed the impact of this scheme on the operation of the local highway network and demonstrate below that this also results in an unacceptable impact on the highway network.

Indicative Arrow Appellant Modelling Results

6.22 Appellant modelling of this option forecast all arms of the junction to be below the widely accepted capacity threshold of 90% Degree of Saturation (DoS) for both developments in isolation and when combined. The Newgate Lane East northbound arm is however approaching capacity in the AM peak with 88.2% DoS for both developments in isolation and 88.4% when combined. The PRC values for the junction as a whole are 2.1% and 2% for the northern and southern developments in isolation respectively and 1.8% for the developments combined. This results in the forecast delay per vehicle (seconds) and maximum queue lengths (vehicles, represented as Passenger Car Units (PCUs)) set out in tables 13 and 14 respectively below. Please note, in the tables below, old Newgate Lane is simply referred to as 'Newgate Lane'.

	75 Dwellings	115 Dwellings	190 Dwellings
AM			
Newgate Lane East Northbound	18	18	18.1
Newgate Lane East Southbound	5.1	5.1	5.1
Newgate Lane	1.8	2.4	3.6
PM			
Newgate Lane East Northbound	5.6	5.6	5.6
Newgate Lane East Southbound	9.3	9.3	9.3
Newgate Lane	1.7	1.9	2.5

Table 13: Indicative Arrow Maximum Queue Lengths (PCUs)
Source: Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

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

6.23 Under this signalisation scheme, developer modelling forecasts queuing of northbound traffic on Newgate Lane East, with queue lengths of 18 – 18.1 PCUs (c.103m) for the northern, southern and combined developments in the AM peak. Delay is also significant for Newgate Lane East northbound traffic in the AM peak, forecast as 10.9 – 11 seconds for all development quanta.

6.24 As set out above, currently, north and south bound traffic on Newgate Lane through this junction experiences free flow conditions. The introduction of additional queue lengths of over 100m and average per vehicle delay of over c.11 seconds for northbound traffic in the AM peak on the newly constructed and vital infrastructure of Newgate Lane East is unacceptable and represent a severe impact on the highway network under paragraph 109 of NPPF.

6.25 Delay under the indicative arrow signalisation scheme when egressing old Newgate Lane is forecast as 64.8 seconds, 67.8 seconds and 75.7 seconds for the northern, southern and combined developments respectively in the AM peak, with similar order values in the PM peak as can be seen in table 15 above. The current delay with existing traffic using the existing junction is forecast by the appellant's VISSIM modelling to be 28 seconds when turning left out of old Newgate Lane onto Newgate Lane East and 51 seconds when turning right in the AM peak and 3 second and 24 seconds in the PM peak respectively. As such the

proposed signalisation scheme does not mitigate the development impact on the old Newgate Lane arm of the junction.

Indicative Arrow Highway Authority Modelling Results

6.26 Modelling has been independently carried out by the Highway Authority of the indicative arrow option using the correct distribution of 72.8% nearside/ 27.2% offside lane split and the correct through lane designation. This again forecasts a worse junction operation than the appellant modelling, with the Newgate Lane East northbound arm closer to capacity in the AM peak with 89.4% DoS for the northern development, 89.5 DoS for the southern development and 89.7 for the developments combined. The PRC values for the junction as a whole are 0.7 and 0.6 for the northern and southern developments in isolation respectively and 0.4 for the developments combined. While the junction is not over capacity, it is very close to capacity, which is reflected in the forecast delay per vehicle (seconds) and maximum queue lengths (PCUs) set out in tables 15 and 16 below.

	75 dwellings	115 dwellings	190 dwellings
	AM		
Newgate Lane East northbound	19.9	20.0	20.1
Newgate Lane East southbound	4.7	4.7	4.8
Old Newgate Lane	1.9	2.6	3.9
	PM		
Newgate Lane East northbound	5.6	5.6	5.6
Newgate Lane East southbound	9.3	9.3	9.3
Old Newgate Lane	1.7	1.9	2.5

Table 15: Indicative Arrow Maximum Queue Length (PCUs) AM peak, HA modelling
Source: HA Modelling Indicative Arrow (October 2020, (Appendix NG3)

	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 16: Indicative Arrow Delay per Vehicle (seconds) AM peak, HA Modelling
Source: HA Modelling Indicative Arrow (October 2020, (Appendix NG3)

6.27 Under this signalisation scheme, HA modelling forecasts greater queuing of northbound traffic on Newgate Lane East, with queue lengths of 19.9 – 20.1 PCUs (c.121m) for the northern, southern and combined developments in the AM peak. Delay per vehicle is also significant for Newgate Lane East northbound traffic in the AM peak, forecast as 11.8 – 12 seconds for all development quanta. Delay when egressing old Newgate Lane also increases in the HA modelling forecasts compared to the developer modelling.

6.28 The same conclusion is drawn from the appellant and HA modelling results; the introduction of the above additional queue lengths and delay on Newgate Lane East is unacceptable. Under all modelling scenarios, the delay is increased significantly on all arms of the junction compared to the current situation. This is particularly relevant when considering the significant detrimental impact on the benefits generated by the recent improvements to Newgate Lane and Peel Common Roundabout as set out in Section 5. It is my professional opinion that the introduction of an indicative arrow signalisation scheme at this location also represents a severe impact on the highway network under paragraph 109 of NPPF.

Indicative Arrow Cumulative Delay

6.29 The cumulative additional delay to vehicles in the AM peak hour due to the introduction of the indicative arrow signalisation scheme for each development quantum is shown in the Table 17 below. Results are show for both the Highway Authority and appellant modelling.

	75 Dwellings		115 Dwellings		190 Dwellings	
AM						
Lane Split	**Appellant**	**HA**	**Appellant**	**HA**	**Appellant**	**HA**
Newgate Lane East Northbound	5.1	5.5	5.1	5.5	5.1	5.6
Newgate Lane East Southbound	1.3	1.2	1.3	1.3	1.5	1.5
Old Newgate Lane	1.6	1.7	2.0	2.2	2.9	3.3
Total AM peak hour delay	8.0	8.4	8.4	9.0	9.5	10.4

Table 17: Indicative Arrow Additional peak hour delay on Newgate Lane East (hours)
Source: HA Modelling Indicative Arrow (October 2020, (Appendix NG3) and Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

6.30 The appellant's modelling shows the introduction of an indicative arrow signalisation scheme at this location adds over between 8 and 9.5 hours of delay cumulatively in the AM peak for the developments in isolation or combined. The corrected HA modelling forecasts slightly higher cumulative delay of between 8.4 and 10.4 hours. As set out in Section 5, this will have a detrimental impact to the BCR of the recent improvements to Newgate Lane East and heavily impacts the benefits of this scheme. This supports my conclusion above, that the forecast level of delay is unacceptable, supported by the 24 hour delay caused by signal implementation, and represents a severe impact on this new and vital section of highway network under paragraph 109 of NPPF for either of the developments in isolation or combined.

Indicative Arrow Comparative Delay

6.31 Table 18 below is a comparison of the AM peak delay caused by the single lane duelling scheme, showing the total average delay per vehicle across all arms of the junction and the delay for the junction as a whole forecast due to the indicative arrow signalisation scheme.

	75 Dwellings		115 Dwellings		190 Dwellings	
AM						
	Appellant	**HA**	**Appellant**	**HA**	**Appellant**	**HA**
Delay, Signalisation	11.6	12.2	12.1	12.9	13.4	14.6
Delay, Single Lane Duelling	5.57		6.70		10.63	
Difference	6.03	6.63	5.4	6.2	2.77	3.97

Table 18: Indicative Arrow signalisation and Single Lane Duelling Average Delay per Vehicle (seconds), AM Peak
Source: Newgate Lane VISSIM comparison, October 2020 (CDH. 17), HA Modelling Indicative Arrow (October 2020, (Appendix NG3) and Appellant LinSig Modelling, October 2020 (CDA. 71 and CDA. 142)

6.32 The delay per vehicle across the junction as a whole is higher for the proposed indicative arrow signalisation scheme under all scenarios. The Single Lane Duelling scheme was rejected as delay was unacceptable; it therefore follows that the delay caused by the proposed indicative arrow signalisation scheme should also be considered unacceptable.

Toucan Crossing

6.33 A contribution of £150,000 to be split proportionally between the two developments towards the installation of a Toucan crossing at Woodcote Lane and Brookers Lane has been agreed with the appellant. This is to mitigate the increase in pedestrian and cycle movements generated by the proposed developments and to provide safe and suitable access for all users to amenities within Bridgemary by foot and cycle. It is required to make the development acceptable; without this crossing, safe and suitable access to the site for all users is not achieved and the increase in pedestrian and cycle movements due to the proposed developments, either in isolation or combined, leads to a severe impact under paragraph 109 of NPPF.

6.34 Implementation of this necessary infrastructure does however have a detrimental impact on Newgate Lane East traffic flows. A study was carried out based on 2018 data (Toucan Crossing Modelling Outputs, Appendix NG4), using existing 2018 traffic flows, exploring the impact of implementation of a toucan crossing at this location. A summary of the study findings is presented below.

2018 AM peak (0800-0900)

- Newgate Lane northbound – 28 PCUs (159m) average queue length. 11.7 seconds average delay per vehicle.
- Newgate Lane southbound – 7 PCUs (40m) average queue length. 4.2 seconds average delay per vehicle.

2018 PM peak (1700-1800)

- Newgate Lane northbound – 9 PCUs (54m) average queue length. 4.9 seconds average delay per vehicle.
- Newgate Lane southbound – 105 PCUs (605m) average queue length. 109.3 seconds average delay per vehicle. The degree of saturation would be above 90% which would mean that the queue would not clear before the crossing was demanded again.

2018 Off peak

- Newgate Lane northbound – 8 PCUs (47m) average queue length. 4.5 seconds average delay per vehicle.
- Newgate Lane southbound – 13 PCUs (74m) average queue length. 6 seconds average delay per vehicle.

- The traffic modelling has been made on the assumption that the crossing would be straight across. The stop time for traffic has been modelled at its minimum and even if the crossing were to be staggered the stop times would remain virtually the same with the similar queue lengths generated.

6.35 Figure 4 below represents these queue lengths graphically for the AM and PM peaks.

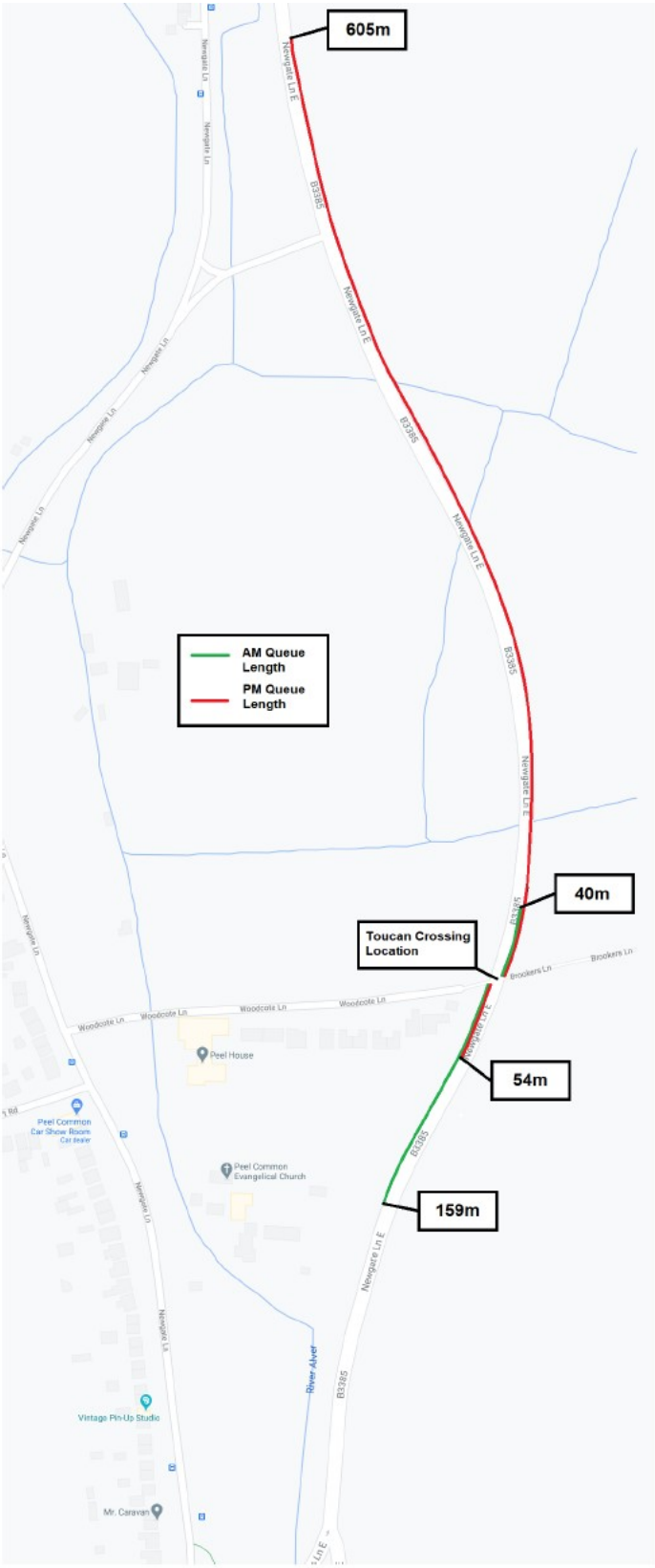

Figure 4: Toucan Crossing Maximum Queue Lengths, AM and PM Peaks.
Source: Extracted from Toucan Crossing Modelling Outputs, October 2020, (Appendix NG4)

6.36 The findings above do not account for the additional pedestrian and cycle demand from the proposed developments, which would increase the frequency that the crossing is used, or the additional traffic generated by the proposed developments. These factors would result in greater queuing and delay than that forecast above.

6.37 The level of delay associated with implementation of this signalised crossing is highly detrimental to the operation of Newgate Lane East, particularly in combination with implantation of any of the signalisation proposals at old Newgate Lane/ Newgate Lane East. As shown in Table 6, all scheme benefits are eliminated for full signalisation using the corrected HA modelling in the AM peak and all benefits under all scenarios are eliminated for the PM peak hour. In my professional opinion this represents a significant impact in terms of congestion that has not been mitigated and a severe residual cumulative impact resulting from either of the developments in isolation or combined.

Summary

6.38 The proposed signalisation of old Newgate Lane/ Newgate Lane East junction, through either a fully signalised or indicative arrow arrangement, fails to the mitigate the impact of the either development in isolation or both developments cumulatively with respect to capacity at this junction. The junction is forecast to operate over capacity, with significant and unacceptable resultant queuing and delay under the fully signalised proposals. Under both fully signalised and indicative arrow options, delay when egressing old Newgate Lane has not been mitigated and the introduction of new and substantial queuing and delay on the new and vital infrastructure of Newgate Lane East is unacceptable.

6.39 The cumulative impact on the road network resulting from the forecast queuing and delay caused by implementation of either signalisation scheme at all development quantum's is considered to have a severe impact on the local highway network. This is particularly relevant as the forecast delay erodes either all, or a substantial proportion of the journey time savings and therefore benefits of the newly constructed Newgate Lane East.

6.40 Implementation of the required signalised toucan crossing of Newgate Lane East at Brookers Lane/ Woodcot Lane leads to substantial and unacceptable further queuing and delay on Newgate Lane East.

6.41 It is my professional opinion that the queue lengths and delay associated with both the proposed full signalisation scheme and the proposed indicative arrow signalisation fail to mitigate the impact of the development. This is worsened by the required implementation of a toucan crossing. The development is not in compliance with NPPF paragraph 108 part c, resulting in the development having a severe residual cumulative impact on the road network in conflict with paragraph 109 of NPPF.

6.42 Furthermore, for the same reasons, the developments are not compliant with Policy CS5 part 3, as the operation of the local road network is adversely affected or DSP40 part v as the proposal does have unacceptable transport implications.

6.43 The development should be refused in accordance with the Policy CS5 part 3, DSP40 part v and paragraph 109 of NPPF.

7. Summary and Conclusions

7.1 My evidence considers the transport related matters which are the subject of this Inquiry. I have been requested by FBC to provide expert witness services for the Inquiry; my evidence is given on behalf of FBC as Local Planning Authority. My evidence considers the following in relation to RfR h and g for the northern and southern sites respectively:

- The existing operation of old Newgate Lane/ Newgate Lane East junction.
- The significance of Newgate Lane East in relation to the recent improvements that have been made to this road and the surrounding highway infrastructure to facilitate access to Fareham and Gosport.
- The impact of full signalisation of the old Newgate Lane/ Newgate Lane East junction. This is the only option presented the Highway Authority consider safe.
- For completeness, the impact of the proposed signalisation scheme with an indicative right turn arrow arrangement at old Newgate Lane/ Newgate Lane East junction.
- The impact of implementation of a toucan crossing on Newgate Lane East at Brookers Lane and Woodcot Lane.

7.2 Using site observations and VISSIM modelling outputs I demonstrate that the existing layout of old Newgate Lane/ Newgate Lane East operates satisfactorily under existing and future traffic conditions in the absence of the proposed developments. I also show the future operation of the junction including development traffic is very poor and unacceptable. This is a matter agreed with the appellant, however, provides useful context for consideration of the signalisation proposals.

7.3 Based on the business case for the Newgate Lane East improvements, I set out the benefits that were considered in funding and constructing this scheme and the impact the signalisation proposals would have on these benefits. Funding of £9.515m was based largely on peak hour journey time reductions. I show in Sections 5 and 6 that either of the developments in isolation or the developments combined, have an unacceptable and severe impact on these journey times.

7.4 I review the modelling outputs for the full signalisation scheme. Depending upon which modelling parameters are considered and the development quantum selected, delay per vehicle of 41.1 - 68.5 seconds northbound on Newgate Lane East in the AM peak hour and

6.2 – 7.2 seconds delay per vehicle southbound on Newgate Lane East in the AM peak hour is forecast. Northbound queues are considerable at between 57.1 PCUs (328m) and 82.9 PCUs (477m). The fully signalised scheme is over capacity in all scenarios. I conclude that, regardless of the modelling parameters selected, either of the developments in isolation, or the developments combined result in a severe impact on the highway network and should be refused in accordance with the Policy CS5 part 3, DSP40 part v and paragraph 109 of NPPF.

7.5 In support of the above conclusion, I consider the cumulative delay for all vehicles using the fully signalised junction in the AM peak. On aggregate this is forecast to result in between 20.3 and 33.5 hours of delay each day in this single peak hour. In my opinion, this further supports RfR (h) and (g). I also compare the fully signalised junction operation to the rejected single lane duelling scheme, considered by the appellant unacceptable due to poor operation, and demonstrate that the delay for the junction as a whole is significantly greater under the signalisation proposals.

7.6 The indicative arrow signalisation scheme is not considered acceptable by the Highway Authority on safety grounds. Nevertheless, for completeness, I consider the modelling outputs of this junction arrangement. Again depending upon which modelling parameters are considered and the development quantum chosen, implementation of this scheme is forecast to result in delay per vehicle of 10.9 - 12 seconds northbound on Newgate Lane East and 6 – 7.4 seconds southbound on Newgate Lane East in the AM peak. Northbound queues are between 18 PCUs (c.103m) and 20.1 PCUs (c.121m). I conclude that, regardless of the modelling parameters considered acceptable, the indicative arrow signalisation scheme also results in an unacceptable and severe impact on the highway network for either of the developments in isolation, or the developments combined and again conclude that implementation of either of the proposed developments with this signalisation scheme should be refused in accordance with the Policy CS5 part 3, DSP40 part v and paragraph 109 of NPPF.

7.7 In support of the above conclusion, I consider the cumulative delay for all vehicles using the indicative arrow signalisation scheme in the AM peak. On aggregate this is forecast to result in in between 8 and 10.4 hours of delay each day in this single peak hour. This again further supports RfR (h) and (g). I also compare the indicative arrow signalisation operation to the rejected single lane duelling scheme and demonstrate that the delay for the junction as a whole is greater under the signalisation proposals.

7.8 The implementation of a signalised Toucan crossing at Brookers Lane/ Woodcot Lane is required to mitigate the increase in pedestrian and cycle movements generated by the proposed developments and to provide safe and suitable access for all users to amenities within Bridgemary by foot and cycle. The resultant queuing and delay are substantial with an average queue length of 159m and 11.7 seconds average delay per vehicle in the AM peak hour northbound. In the PM Peak queuing and delay are even more significant with, 605m average queue length and 109.3 seconds average delay per vehicle southbound. Due to background traffic growth and increased pedestrian, cycle and traffic demand generated by the proposed developments, the impact will be greater than that described above should the developments be permitted. This impact on Newgate Lane East is unacceptable in isolation and when combined with the proposed signalisation of old Newgate Lane/ Newgate Lane East.

Conclusions

7.9 Either of the developments in isolation, or the developments combined, will result in an unacceptable delay to users of the highway network. This conclusion is the same for both the fully signalised and indicative arrow signalisation arrangements. Inclusion of the toucan crossing adds further significant queuing and delay on Newgate Lane East, providing additional weight to my conclusion that the proposed development mitigation is unacceptable.

7.10 In my opinion, the severe impact on the operation of the highway network justifies FBC's decision to refuse the application in accordance with paragraph 109 of the NPPF.

7.11 The proposed signalisation of old Newgate Lane/ Newgate Lane East, under either of the proposed signalisation arrangements and for all development quanta, results in a severe impact on the highway network. Implementation of the Toucan crossing results in a severe impact on the highway network. These proposals, either in isolation or combined, would result in unacceptable and severe harm to operation of the highway network for either development in isolation or combined and are not in compliance with Development Plan policies CS5 and DSP40 and the NPPF.