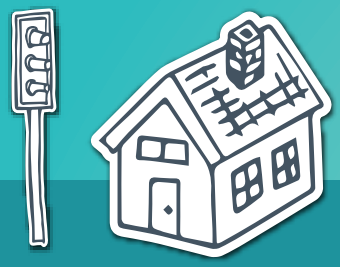

Eastleigh Borough Local Plan 2016-2036

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Strategic Growth Option Comparative Assessment Background Paper: Update on Transport Issues

June 2019

EASTLEIGH BOROUGH COUNCIL

1. INTRODUCTION

1.1 The Strategic Growth Option (SGO) Background Paper Part 1 (SGO001) compares the alternative SGOs against a wide range of transport indicators, including:

- The increase in traffic congestion (delays) generated by each SGO;
- The increase in traffic in the South Downs National Park generated by each SGO.

1.2 This comparison is based on the detailed information contained in the Transport Assessment Part 1 (TRA001). This paper provides a brief update on two aspects of this information.

2. DELAYS

2.1 The SGO Background Paper Part 1 (SGO BP 1) compares the delays generated by an Eastleigh Local Plan based on the different SGO scenarios. This is a comparison of the delays across the South Hampshire area, reflects the overall delays people will experience as they travel across the highway network, and provides the best picture of cumulative delays.

2.2 The NPPF promotes planning for the development needed (consistent with the principles of sustainable development) and explains that development should only be refused on transport grounds when its residual cumulative impacts are severe[1].

2.3 By this indicator, as set out in the SGO BP 1 paragraphs 6.115 – 6.127, a Local Plan based on SGO B/C (DS3 - 'do more' scenario) significantly minimises the increase in delays relative to a Local Plan based on other SGOs. For example, SGO D generates at least a 32% greater increase in delays and SGO E a 68% greater increase in delays than SGO B/C (a 9.5% and 32% greater increase in delays respectively in the peak hours). This is despite SGOs D and E delivering less development which generates 17% to 20% fewer trips. As set out in the SGO BP 1 paragraphs 6.128 – 6.137, SGOs D or E also generate significantly more delays than SGO B/C in the areas that already experience more congestion.

2.4 This paper provides a further technical assessment of the 'severe' delays occurring in each SGO scenario in the combined AM and PM peak, based on the data for Eastleigh, Southampton and Winchester. The definition of severe delays is one used by Systra (the transport consultants) and is based on both the overall and change in level of delays or vehicle capacity at the junction. The definition is set out in more detail in their Transport Assessment and at paragraph 6.156 / Table 31 of the SGO BP 1. This is a technical definition used to assess whether individual junctions need to be improved. It does not identify whether the cumulative delays across the network are severe. In terms of the NPPF, it is the cumulative delays which best indicate whether a development can be supported in principle. The cumulative delays are as set out above and demonstrate that SGOs D or E generate a significantly greater increase in overall delays than SGO B/C.

2.5 Focussing just on the technical definition of severe delays, SGOs B/C (DS3 scenario) and SGO E generate severe delays at the least number of junctions. SGO B/C does generate severe delays at a few more junction arms, which in themselves relate to longer delays. However these relate to the technical definition of severe delays at individual junctions, and in total they amount to only 1.6% of the cumulative delays experienced across the whole network. In other words the technical definition of severe delays accounts for only a very small proportion of the cumulative delays which are experienced as people travel across the network. Over 98% of the delays people will experience are at other locations not captured by the analysis of severe

[1] NPPF 2012 paragraph 32. The NPPF 2018 sets a very similar approach, stating at paragraph 109: "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".

delays. The data is set out in Appendix 1. In terms of the cumulative delays experienced across the whole network, SGOs D or E actually generate a significantly greater increase in total delays than SGO B/C, as set out in paragraph 2.3.

2.6 Furthermore, the severe delays as technically defined actually result in relatively short delays in practice, usually equating to delays for vehicles at individual junctions of less than 90 seconds at peak times, and only on some of the arms of a junction, as set out in SGO BP Part 1 paragraph 6.168. These are the total delays at these junctions, the additional delays caused by just the Local Plan development is smaller.

2.7 It is not surprising that, based on the technical definition of severe delays, a major development would generate some severe delays at particular points. In addition SGO B/C will deliver significantly more development than SGOs D or E and so it is not surprising that it is generating more such congestion at particular points. However more development would be needed under the SGO D or E scenarios in the longer term as well, which would increase the level of severe congestion in these scenarios also; and SGOs D or E are already generating a greater increase in overall / cumulative delays across the network than SGO B/C, despite delivering less development.

2.8 The incidences of severe delay at individual points on the network account for only a very small proportion of the cumulative impacts set out in the NPPF. Taking the overall cumulative delays across the network, as set out in the SGO BP1, SGOs D or E generate a significantly higher increase in delays overall, and a higher increase in delays in areas which have more congestion in the first place. This is despite SGOs D or E delivering less development and generating fewer trips.

2.9 The results for the overall delays across the network best reflect the cumulative effects of development on congestion across the area. They also better reflect the overall experiences of drivers as they travel across the network.

2.10 For these reasons, and in the context of the NPPF, the Council continues to consider that SGO B/C (DS3) performs better in terms of minimising delays.

3. SOUTH DOWNS NATIONAL PARK

Introduction and Summary

3.1 The SGO BP 1 paragraphs 6.143 – 6.149 compares Local Plans with different SGOs based on the increase in traffic at a selection of locations within the National Park in the AM peak. In summary, the key points were that in the AM peak, compared to the other SGO scenarios, a Local Plan based on SGO B/C (DS3) generated on average:

- Less (virtually no) increase in traffic overall on rural roads within the National Park (the largest increase at an individual location being at Owslebury);

- A greater increase in traffic on B roads on the edge of the National Park (with other SGO scenarios generating a decrease, although SGO B/C [DS3] also generates a decrease in Twyford).

3.2 At the time of preparing the SGO BP, the transport assessment had only extracted and presented traffic flow data across the Borough and the National Park for the peak periods. However, the Council has a statutory duty to have regard to the purposes of the National Park, which are to conserve and enhance the natural beauty, wildlife and cultural heritage of the area; and to promote opportunities for the understanding and enjoyment of the special qualities of the National Park by the public. To the extent that increased traffic levels could relate to these objectives, these considerations apply across the whole day and not just in peak periods. Therefore the Council has requested that traffic flow data for the National Park be extracted from the transport model runs for the whole day.

3.3 This paper therefore analyses the traffic data in the National Park over a whole day (12 hour) period. On this basis SGO B/C (DS3) would generate a greater increase in traffic overall on rural roads within the National Park compared to the SGO D or E scenarios, again with the largest increase being at Owslebury. However, these predictions are based on the results of a strategic transport model which do not capture the local 'country lane' nature of the roads within the National Park. In reality it is likely that these lanes will be less attractive to through traffic and that therefore the increase in traffic will be less than the strategic transport model is predicting.

3.4 Furthermore, these results are prior to implementing any traffic mitigation measures within the National Park, which are likely to further minimise any increases in traffic. The results therefore highlight the importance of considering such measures, and the Council is proposing modifications to the Local Plan to further strengthen the policy requirements to provide such measures. The position is explained in more detail below.

Analysis

3.5 As noted above, this update sets out the results, undertaking the same comparative assessment of SGOs as in the SGO BP1, but based across the whole day (12 hour period) rather than just the AM peak.

3.6 Tables 2 and 3 set out the increase in traffic flows from the 2036 baseline to each 2036 Local Plan development scenarios over the 12 hour day time period. Table 2 focuses on the rural roads and Table 3 the B roads.

Table 2: Changes in Traffic Flows on Rural Roads within South Downs National Park: 12 hour daytime average

		Owslebury	Owslebury to A272	Morestead Road east of Morestead	Morestead Road east of Owslebury	Morestead Road north of Bishops Waltham	Average
DS1	B/C (without link road)	+1,403	+418	+1,152	+205	+218	+679.2
DS2	B/C (with link road and do something)	+782	+20	+573	-129	-145	+220.2
DS3	B/C (with link road and do more)	+1,229	+46	+877	-246	-204	+340.4
DS4	C plus (without link road)	+891	+316	+633	+89	+100	+405.8
DS5	D (sup. dev. in Fair Oak)	+190	+222	+148	+186	+201	+189.4
DS6	E (sup. dev. in Fair Oak)	+262	+214	+308	+271	+259	+262.8
DS7	D (sup. dev to south)	+157	+195	+101	+140	+151	+148.8

Additional information from Systra. Difference in two way traffic flows between 2036 baseline and 2036 development scenario. PCU (Passenger Car Units) per hour. 12 hour AADT, 7am – 7pm.

3.7 Table 2 illustrates that across the whole day period, SGO B/C (DS3) generates on average a greater increase in traffic on rural roads than SGOs D or E. The average increase for SGO B/C (DS3), at 340.4 vehicles, equates to an average of approximately 1 extra car every 2 minutes.

3.8 For SGO B/C (DS3) the largest increase in traffic is through Owslebury, and this is a significantly larger increase than for SGOs D or E. The increase of 1,229 cars over a 12 hour period equates to an average of 1.7 extra cars every 1 minute. It is considered that a significant proportion of this increase is associated with the

increase on the Morestead Road east of Morestead and is likely to reflect a prediction by the model of vehicles from the SGO using an alternative route to the B3335 through Twyford to reach Winchester.

3.9 However, it is important to stress that these results are based on a strategic transport model which codes roads according to their general category and does not identify the local details of every road. In particular, the model codes the road on which these increases are predicted (the road from the B2177 to Owslebury) as a two way road where vehicles can travel at an average of 80 kph (39 kph within the village). In reality, however, this road is a country lane where vehicles can generally pass each other if they slow down or exercise a degree of care, and in a number of places cannot pass and have to give way to each other. In addition the nature / geometry of the road would not enable vehicles to achieve an average speed of 80 kph along its length. This means the road is likely to involve a longer journey time and so be less attractive as an alternative route to Winchester than the model is predicting, particularly as that alternative route (the B3335 via Twyford) involves travelling a similar distance to Winchester. For these reasons, it is anticipated that the country lane to Owslebury will experience a lower increase in traffic than the model is predicting.

3.10 Furthermore, it is important to stress that the predicted increase is prior to the implementation of traffic management measures, which would be likely to further reduce the level of traffic increase. However, these results do emphasise the importance of implementing traffic management measures in the Owslebury area as part of the implementation of the SGO to deter through traffic from using this route.

3.11 It should also be noted that SGO B/C with link road scenarios (DS2 and DS3) are the only scenarios which generate a reduction in traffic flows on specific rural roads: on the Morestead Road east of Owslebury and north of Bishops Waltham.

Table 3: Changes in Traffic Flows on B-roads within or on the edge of the South Downs National Park: 12 hour daytime average

		B2177 approaching Lower Upham from Bishops Waltham	B2177 between Lower Upham and Fishers Pond	B3335 Twyford (just north of cross roads)	Average
		On boundary of Park	On boundary of Park	Within Park	
DS1	B/C (without link road)	+1,909	-12	+15	+637.3
DS2	B/C (with link road and do something)	+2,624	-680	-482	+487.3
DS3	B/C (with link road and do more)	+2,561	-165	-735	+553.7
DS4	C plus (without link road)	+1,759	+42	+17	+606
DS5	D (sup. dev. in Fair Oak)	+6	-110	+486	+127.3
DS6	E (sup. dev. in Fair Oak)	+111	+18	+181	+103.3
DS7	D (sup. dev to south)	-85	+7	+388	+103.3

Additional information from Systra. Difference in two way traffic flows between 2036 baseline and 2036 development scenario. PCU (Passenger Car Units) per hour. 12 hour AADT, 7am – 7pm.

3.12 Table 3 illustrates that across the whole day period, SGO B/C (DS3) generates, on average, a greater increase in traffic on the B roads adjacent to the Park than SGOs D or E. It should also be noted that within the village of Twyford (which is also a conservation area) SGO B/C generates a decrease in traffic, whereas SGOs D or E generate an increase. (However if the model is over predicting traffic increases via Owslebury, it may be under predicting traffic flows through Twyford).

Conclusion

3.13 Overall, compared to the other SGO scenarios, whereas in the AM peak, SGO B/C (DS3) generated the least (on average virtually no) increase in traffic on rural roads and a greater increase on the B roads, looking at the whole day period SGO B/C (DS3) generates a greater increase in traffic on both rural roads and the B roads.

3.14 It should be noted that, looking at individual roads, SGO B/C with the link road is the only scenario which achieves a reduction in traffic on some rural roads. However, overall, SGO B/C generates a greater increase in traffic within the National Park across the whole day period. This is particularly so in the village of Owslebury.

3.15 It is important to stress that these are the results of a strategic transport model which is not intended to take into account the actual 'country lane' characteristics of the individual rural roads concerned, and is prior to the introduction of traffic calming measures. The actual increases in traffic may therefore be less than is predicted by the strategic transport model.

3.16 However these results do emphasise the importance of the SGO and other Local Plan developments funding traffic calming measures at key points, such as Owslebury. This is identified in the Local Plan policy S5 criterion 10a. Furthermore, the Council's proposed modifications provide more emphasis to this requirement.

APPENDIX 1: SEVERE DELAYS BY JUNCTION

1 Table 1 sets out the analysis of severe delays by development scenario. A full description of each development scenario (DS) is set out in the SGO BP 1 Tables. SGO B/C (DS3) represents the Council's preferred scenario. (SGO B/C DS1 is without the link road, and SGO B/C DS2 is with the link road but a lower level of other highway improvements).

2 The results are based on the AM and PM peak combined. Result 1 sets out the number of junctions where severe delays are generated; result 2 the number of arms within those junctions where severe delays are occurring; results 3 and 4 the total length of those severe delays across all vehicles (result 3 expressed in minutes, result 4 in hours). Result 5 sets out the total peak hour delay (in hours) at all junction arms in the whole Eastleigh / Southampton / Winchester area (taken from the Transport Assessment Part 1 Table 17 [TRA001]). Result 6 sets out result 4 as a percentage of result 5. This is the percentage of total peak hour delays which are occurring at junction arms experiencing severe delays. As the percentages are based on the strategic transport model, they should be regarded as indicative.

Table 1: Severe Delays: Eastleigh; Southampton; Winchester; AM and PM Peak Combined

		Scenario						
		DS1	DS2	DS3	DS4	DS5	DS6	DS7
		SGO B/C	SGO B/C	SGO B/C	SGO C	SGO D	SGO E	SGO D
1	Total junctions with at least 1 incidence of severe delay	18	15	13	12	14	13	16
2	Total junction arms with a severe delay	18	19	19	13	15	16	17
3	Total delay in minutes for junction arms with severe delays	11,551	25,972	14,552	8,212	10,384	13,403	11,185
4	Total delay in hours for junction arms with severe delays	192.52	432.87	242.53	136.87	173.07	223.38	186.42
5	Total delay in hours for all junctions	15,763	15,863	15,370	15,466	15,435	15,479	15,386
6	Indicative % delays occurring at severe junction arms	1.2%	2.7%	1.6%	0.9%	1.1%	1.4%	1.2%

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