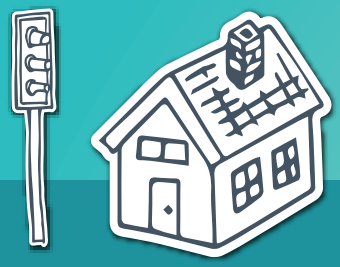


Eastleigh Borough Local Plan 2016-2036

Eastleigh Borough Local Plan 2016-2036

Strategic Growth Option – Comparative assessment background paper

June 2018

EASTLEIGH BOROUGH COUNCIL

This background paper supports the Eastleigh Borough Local Plan and provides background information on the choice of the Strategic Growth Option. This document is not on deposit for consultation and is background evidence.

Any queries regarding the document should be sent to:

Email: localplan@eastleigh.gov.uk
Website: www.eastleigh.gov.uk/localplan2016-2036

Address: Local Plan team, Eastleigh Borough Council, Eastleigh House, Upper Market Street, Eastleigh SO50 9YN

Contents

PART 1:

PART 2: Viability and Deliverability (separate Background Paper)

1. Introduction

Purpose of Report

1.1 The Local Plan allocates Strategic Growth Option (SGO) B/C (north / east of Bishopstoke / Fair Oak) with an associated north of Bishopstoke link road to the M3 junction 12. The Council considers this to be the preferred strategic growth option and that it has a reasonable prospect of delivery. This paper explains why the Council has reached these conclusions.

How to Use This Report

1.2 The background paper explains in:

- Part 1: The comparative assessment of the different SGOs, leading to the selection of SGO B/C. Section 11 provides a summary of all the following analysis, and conclusions leading to the selection of SGO B/C.

- Part 2: The evidence regarding the deliverability of SGO B/C (which should be read alongside the Local Plan's Infrastructure Delivery Plan and Viability Assessment).

1.3 This background paper seeks to draw together comprehensively and summarise the main aspects of all the technical evidence relating to the Strategic Growth Options. Therefore the following guidance may assist in 'signposting' the sections in the rest of the paper:

	Section
1.	**Introduction** The remainder of this section sets out the main stages in preparing the Local Plan; and the key changes to this background paper since it was first published in December 2017
	Part 1: Comparative Assessment
2.	Policy Context This sets out a brief summary of the Government's National Planning Policy Framework (NPPF) and Partnership for Urban South Hampshire's (PUSH) Spatial Position Statement.
3.	Criteria for Assessing the SGOs These are the main issues which have been assessed in this report by the Council's planning officers (sections 6 to 9 below), and the Sustainability Appraisal undertaken by consultants for the Council (which also informs the following sections).

4.	Scope of Assessment This explains how the 8 possible SGOs identified in the 'Issues and Options' paper (December 2015) have been reduced to a 'short list' of 4 possible SGOs: B, C, D or E. These have been further refined into the following permutations which form the basis of the rest of the assessment: B/C, C, D or E. (D or E also have supplementary areas). The section also explains why this is a proportionate range of options to assess.
5.	Settlement Hierarchy The Local Plan sets out a settlement hierarchy of 'tier 1', 'tier 2'and 'tier 3' settlements. This relates to the existing towns and villages in the Borough, and the range of jobs, shops and services found within them. This section provides a broad explanation of how the SGOs relate to this existing settlement hierarchy.
6.	Transport / Accessibility This considers a range of evidence: • Proximity to existing and future facilities (jobs / shops, etc.) and existing travel patterns (as set out in this report); • Proximity to existing rail and bus services (as set out in this report); • Potential to provide new rail and bus services (summary of Council's "SGO sites – Public Transport / Bus Service Options / Viability Study); • The Transport Assessment (TA). This introduces the transport model runs, and explains the level of transport interventions which have or have not been included in each scenario (e.g. public transport, new link roads, motorway junctions, local junctions, etc.) It then sets out some key results: • A comparison of all the SGOs in terms of average trip distances / carbon dioxide emissions / levels of walking, cycling, and public transport use; and in terms of highway delays (congestion) (summary of Transport Assessment Part 1); • More information regarding the level of delays at different junctions and in different areas associated with SGO B/C (summary of Transport Assessment Part 2); • The summary of the Transport Assessment covers the effects in parts of the Winchester / Southampton City Council areas and the South Downs National Park (as well as Eastleigh Borough).

7.	Countryside Gaps None of the SGOs are in areas currently designated as countryside gaps. However it is considered that each of the SGOs is of a scale where the need for countryside gaps to be designated alongside the SGO to protect remaining areas of countryside should be considered. This section considers whether effective countryside gaps can be created alongside each SGO. This section should be read alongside the Council's "Settlement Gap Policy Review". This reviews the existing designated gaps and also provides an assessment of the SGOs.
8.	Landscape Sensitivity This is an overarching assessment of the extent to which each SGO affects landscapes with high, medium and low sensitivity to change. This summarises the Council's "Landscape Sensitivity Appraisal of Sites being considered for Strategic Development as part of the EBLP [to 2036]" This section also explains the relationship of SGO B/C to the South Downs National Park in landscape terms.
9.	Biodiversity This provides a high level comparison of the potential for the different SGOs to affect international or national / local ecology designations and networks. This is not part of the full Habitat Regulations Assessment, which assesses the Local Plan incorporating SGOs B/C in accordance with the regulations in relation to international sites. However it does broadly consider the same issues more generally to assist with a comparison of the SGOs. It has been informed by the earlier HRA screening report (December 2015) which did provide an initial assessment of all SGOs.
10.	Other Environmental Issues This compares the SGOs in terms of: agricultural land value; flood risk; noise / air quality; minerals safeguarding; public open space; heritage and utility infrastructure
11.	Summary / Conclusions
	Part 2: Delivery and Viability
	This part of the paper focuses on the delivery issues associated with the selected SGO, SGO B/C. It considers: • The overall form of development, based on the Council's masterplan (June 2018); • The delivery of the development in relation to ecology, flood risk / drainage,

	heritage / archaeology, and mineral safeguarding issues. • The provision of infrastructure including new schools, health facilities and public transport services; • The provision of the new north of Bishopstoke Link Road, including the estimated cost and specific link road issues (e.g. rail bridge, junction improvements, ecology, flood risk / drainage, landscape, noise); • Overall viability and potential for public funding. Part 2 should be read in conjunction with the Council's Infrastructure Delivery Plan and Viability Assessment.

Background: How the Local Plan SGO proposals have emerged

1.4 There is a major need for new development in Eastleigh Borough over the Local Plan period to 2036, as identified by the Partnership for Urban South Hampshire's (PUSH) Spatial Position Statement (2016) and supporting reports of objectively assessed need.

1.5 The Council's Issues and Options paper (December 2015) set out 8 different Strategic Growth Options (SGOs) to help meet this need for development. Public consultation and a sustainability appraisal were undertaken on these options.

1.6 The full Council approved its "Development Distribution Strategy and Principles" paper on 15th December 2016. This set the principle of exploring the delivery of a substantial proportion of the new green field development needed in a Strategic Development Area (towards the upper end of the 4,000 – 6,000 dwelling range), in order to achieve a degree of self-containment and to deliver significant new infrastructure (including roads).

1.7 The emerging Local Plan is based on including SGO B/C (north of Bishopstoke and Fair Oak). The full Council noted the emerging Local Plan on 20th July 2017, and approved the Local Plan for formal consultation on 11 December 2017, provided the completion of the evidence did not significantly change the approach. The initial rationale for selecting SGO B/C was first set out in the Council paper of July 2017 and then in a first version of this background paper published in December 2017. This background paper is now updated to reflect the latest evidence.

Main changes since December 2017 version of this background paper

1.8 The main changes from the December 2017 version of this paper are as follows:

- Further options are considered. The December 2017 paper considered options based on SGOs B/C, D or E, the latter two with supplementary development to the north east of Fair Oak. In addition this paper also considers option C with just a part of B (for simplicity referred to as option C), and option D with its supplementary area located immediately to its south.

- Increased development capacity estimates are incorporated for options D and E. This reduces the scale of the supplementary development sites needed elsewhere and leads to a reappraisal of the range of facilities and services options D or E could sustain.

- The Borough's settlement hierarchy is considered.

- The public transport assessment is updated. In addition to options B/C and E, the potential to provide new bus services has now been assessed for options C and D. The potential to provide new rail stations has been further informed by discussions with Network Rail. Current public transport use data has been included.

- The results of the latest transport modelling have been incorporated. By July 2017 transport modelling had been undertaken for options B/C (with the link road) and option E, with full development and 'do minimum' transport interventions. By December 2017 transport modelling had been undertaken for options B/C with 'interim do something' transport interventions. These sat alongside a wider assessment of transport and accessibility, as set out in the December 2017 version of this paper. This paper now reflects transport modelling for options B/C, C, D and E with 'do something' transport interventions.

- The assessment of countryside gaps, landscape and other environmental issues has been refined and updated, to reflect the full range of options and to consider locally designated historic parks and gardens.

- The assessment of biodiversity has been updated to reflect the latest evidence, including the transport modelling and habitat regulations assessment.

- The summary of the sustainability appraisal has been updated to reflect the full range of options and latest evidence.

- The delivery section has been updated to reflect the latest evidence.

- A few minor changes have been made in places to improve the clarity of the paper.

PART 1: COMPARATIVE ASSESSMENT OF STRATEGIC GROWTH OPTIONS (SGOs)

2. Policy Context

2.1 This section briefly summarises the key approaches within policy which should guide the strategic location of development.

National Planning Policy Framework (NPPF) (2012)

2.2 A draft update of the NPPF was published in 2018 for consultation. It indicates that under the transitional arrangements the Eastleigh Local Plan will still be examined under the existing NPPF (2012).

General

2.3 There should be a presumption in favour of sustainable development, creating synergies between economic, social and environmental aims, seeking positive improvements to the quality of the built, natural and historic environment and people's quality of life, and planning positively for development needs unless the adverse impacts of doing so would significantly outweigh the benefits (paras. 6 - 15, 151 – 152).

2.4 Councils should produce distinctive local plans which reflect the needs and priorities of their communities and empower local people to shape their surroundings; local circumstances should be taken into account (paras. 1, 10 and 17).

Transport, Accessibility and Community

2.5 Growth should be focussed in locations which are or can be made sustainable, making the fullest use of public transport, walking and cycling (paras. 17, 30, 34, 35).

2.6 There should be a mix of employment, retail and leisure uses, and access to local and community facilities. Large scale residential development should provide a mix of day to day facilities, including jobs. Primary schools and local shops should be within walking distance, and great importance is attached to the provision of a choice of school places (paras. 6, 7, 17, 37, 38, 70, 72).

2.7 Cost effective transport improvements should be made to limit significant impacts. Development should only be prevented when the effects are severe (para. 32).

2.8 The supply of homes to achieve sustainable development can sometimes best be achieved through large scale development (new or expanded

settlements) which follow ‘garden city’ principles. It is important to take account of the different roles and characters of different areas, establish a strong sense of place, and address the connections between people and places and the integration of new development into the natural, built and historic environment (paras. 17, 52, 58, 61).

2.9 The aim is to promote the vitality of main urban areas and town centres, re-use previously developed land, and promote mixed use development (paras. 17, 23 – 27, 111).

Natural Environment

2.10 The natural environment should be protected and enhanced, recognising the intrinsic character and beauty of the countryside, and that open land can perform many functions. Development should be located on land of lesser environmental value where this is consistent with other policies. Valued landscapes, geology and soils should be protected and enhanced (paras. 6, 7, 109, 110).

2.11 Biodiversity should be enhanced and coherent ecological networks established, and impacts on biodiversity minimised. Designations should be protected commensurate with their status (paras. 6, 7, 109, 110, 114, 117 – 119).

2.12 Great weight should be given to conserving the landscape and scenic beauty of national parks (paras. 115 – 116).

2.13 Development should minimise and not be affected by pollution (e.g. noise, air quality, light pollution); and take account of its effect on the amenity / general sensitivity of the area (paras. 110, 120 – 125).

2.14 Account should be taken of protecting the most versatile agricultural land (para. 111).

2.15 Minerals should not be needlessly sterilised and their prior extraction should be encouraged (para. 142).

2.16 The built and historic environment should be protected and enhanced, and heritage assets conserved relative to their significance (paras. 6, 7, 17, 132 – 133).

2.17 The aim is to mitigate and adapt to climate change, plan for development in locations which reduce greenhouse gases, take account of flood risk, and locate inappropriate development away from the areas at highest flood risk (paras. 6, 7, 17 93 – 95 100 – 103).

Evidence

2.18 Plans should be justifiable and based on the most appropriate strategy against reasonable alternatives, assessed against proportionate evidence (paras. 167, 182). (It is noted that the draft NPPF refers to ‘an appropriate strategy’ para 36b).

2.19 Plans should be viable and deliverable (paras. 173 – 177).

2.20 Councils have a 'duty to co-operate' in preparing plans, and to plan strategically across local boundaries (paras. 178 – 181).

PUSH Spatial Position Statement (2016)

2.21 This statement was prepared by the 12 Councils of South Hampshire as part of their 'duty to co-operate'. It assessed the overall need for development and proposed a development distribution across the sub-region (with Borough wide development targets) taking account of the 'cities and urban areas first' approach, environmental designations and the availability of transport and other infrastructure.

2.22 The Statement's Spatial Principles support sustainable economic growth; bringing benefits to local communities; protecting our natural environment; and good places to live and work (SP1). Strategic development locations are identified for mixed use development, including a new strategic development location in the northern part of Eastleigh Borough (SDL1), the location of which will be determined through the Local Plan process (para. 5.38). Southampton is designated a regional city centre and Eastleigh a large town centre; district and local centres will be defined by Local Plans (R1). The provision of existing and new green infrastructure will be supported (G1). Strategic countryside gaps between settlements are important in maintaining the sense of place, settlement identity and countryside setting for the sub region and local communities; and local plans should define strategic and local countryside gaps (S1). The natural environment will be protected and flood risk managed (Env1). The delivery of housing, employment and transport infrastructure should be integrated; development should be located where it is or can be well served by public transport; and bus, rail, walking and cycling provision enhanced (T1). PUSH, Solent Transport and Councils will work together to deliver highway improvements to support new development (T2). The provision of new and improved social infrastructure, including education, health and community facilities should be assessed in preparing local plans (I1).

3. Criteria for assessing the Strategic Growth Options (SGOs)

3.1 The policy context above sets out the issues which the Council has considered in selecting its preferred strategic growth option. Council officers have distilled these issues into the following assessment criteria:

(a) Transport and Accessibility. The aim is to minimise pollution and emissions by encouraging walking, cycling and public transport, and to ensure access to facilities for people without cars. The issues considered are the proximity to the nearest shopping centres (and the size of that centre), to other supermarkets, schools, doctor's surgeries

and public transport (including the frequency / destination of those services), and the potential for SGOs to improve these facilities or services.

(b) Countryside Gaps. The aim is to maintain the separate identity of individual settlements. The issue to consider is whether an SGO is in a gap or would create the need for a gap, and whether it would maintain or create an appropriate gap with surrounding settlements.

(c) Landscape Sensitivity. The aim is to protect or manage change in landscapes with higher sensitivity to change. The issue to consider is whether the characteristics of a landscape within a potential SGO area make it sensitive to change.

(d) Biodiversity. The aim is to protect and enhance biodiversity. The issue to consider is whether an ecology designation is close to or will be affected by an SGO, the importance of that designation, and the potential impact on it.

(e) Other Environmental Considerations. The aims are various. The issues to consider are whether an SGO site is of good agricultural land value or is affected by noise, air quality, contamination, mineral reserves, public open space, heritage / archaeology, pylon or pipeline issues.

3.2 Council officers have undertaken their own assessment of these issues as set out below. The Council has also commissioned a Sustainability Appraisal (SA) undertaken by Land Use Consultants. The first SA was published in December 2015 alongside the Issues and Options paper. This assessed 23 strategic locations and 8 strategic spatial options. These were the 8 options (A to H) set out in the Issues and Options paper, which were geographical groupings of the 23 strategic locations. The assessment of the relevant options at that stage was summarised and considered as part of the earlier December 2017 version of this paper. A final SA has now been produced which republishes this earlier assessment and in addition produces a final assessment based on a refinement of the options to be considered (i.e. the options set out in this paper), and the latest available evidence. This appears in the main SA report in the section “SA findings for the Strategic Growth Option and reasonable alternatives” (starting at page 114) and in Appendix 6.

3.3 The differences between the SGOs identified by the SA are summarised in the Comparative Summary of SA Findings for Strategic Growth Options and these differences are reproduced in tables in the relevant section below. SAs are intended to be relatively strategic assessments and in some cases the Council provides an additional commentary based on the more detailed analysis in this paper. The tables summarise the key differences between the SGOs, rather than identify every detailed difference. For example an SGO is scored as “better” or “worse” if its SA score is higher or lower than just one of the other main SGOs. The tables also summarise the relative differences between the SGOs rather than the actual SA scores. They compare SGO B/C to SGOs D and E; and also identify the differences between SGOs B/C

and C (which only occur in the “Other Environmental” section). All the SA indicators are set out in the sections below, except for 1.1 (affordable housing) and 1.2 (other specialist housing), for which all SGOs score equally; and those relating to climate change and waste management (which the SA only assesses for the development management policies).

4. Scope of assessment

4.1 The Issues and Options Paper identified 8 SGOs.

4.2 The following SGOs reflect a series of smaller sites which are now assessed in the Council's 'Small and Medium Greenfield Sites Assessment' background paper:

i) SGO A (Extensions to settlements); and

ii) SGO F (extending Hedge End and Botley).

4.3 It is now considered that the following SGOs are not appropriate for housing led development for the following reasons and so are excluded from further assessment:

(i) SGO G (Hamble Airfield). This area is allocated by the County Council for sand and gravel extraction and then restoration to grazing, nature conservation, open space, public access and woodland. Eastleigh Borough Council has already agreed[1] there should be no significant development in the Hamble peninsula, given the transport and countryside gap issues. The PUSH Spatial Position Statement also indicates that strategic growth should be in the north rather than the south of the Borough.

(ii) SGO H (Redevelopment of Eastleigh Riverside for employment uses). The Issues and Options paper did not envisage this would be for housing led development and this remains the case.

4.4 This leaves four SGOs as identified in the Issues and Options paper to be assessed:

SGO B – Expansion of Fair Oak and Bishopstoke to the north/north east with related development in Allbrook village;

SGO C – Expansion of Fair Oak to the east and north;

SGO D - Expansion of Bishopstoke to the south and Horton Heath to the west;

SGO E - Extension of West End to the north of the M27

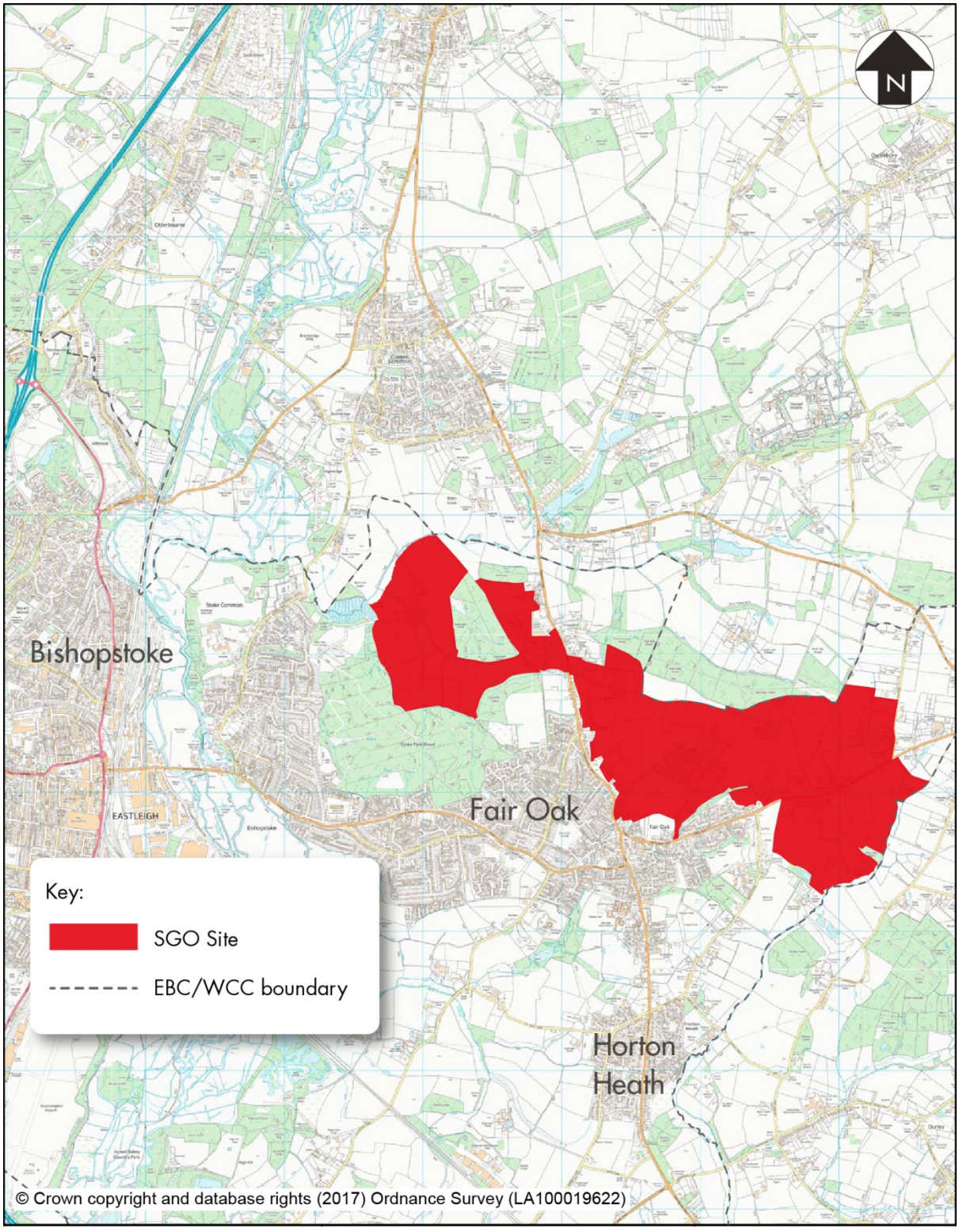
4.5 The Borough wide housing trajectory indicates that an SGO is likely to deliver around 3,350 homes by 2036 and that there is therefore also a need for around 1,900 homes on other smaller green field sites. The employment trajectory indicates that an SGO also needs to deliver 30,000 sq m of employment to help meet Borough wide needs. Therefore if an SGO is identified which delivers less than 3,350 homes and less than 30,000 sq m of employment, further housing and employment sites will also be needed to supplement the SGO. This has enabled officers to give further consideration

[1] 15 December 2016 Council: Development Distribution Strategy and Principles.

to the permutations of SGOs and supplementary areas to be assessed, as follows. (The dwelling figures are all based on achieving mixed use communities. The full range of uses is set out in more detail in the Transport and Accessibility section).

Table and Map 1: SGO B/C

Option Ref	Name	(Full Name set out in Issues and Options paper)	Estimated dwelling capacity
SGO B/C (with link road)			
SGO:	North and east of Bishopstoke / Fair Oak	Expansion of Fair Oak and Bishopstoke to the north/north east with related development in Allbrook village; Expansion of Fair Oak to the east and north.	5,300
Supplement:	None		0
Total			5,300

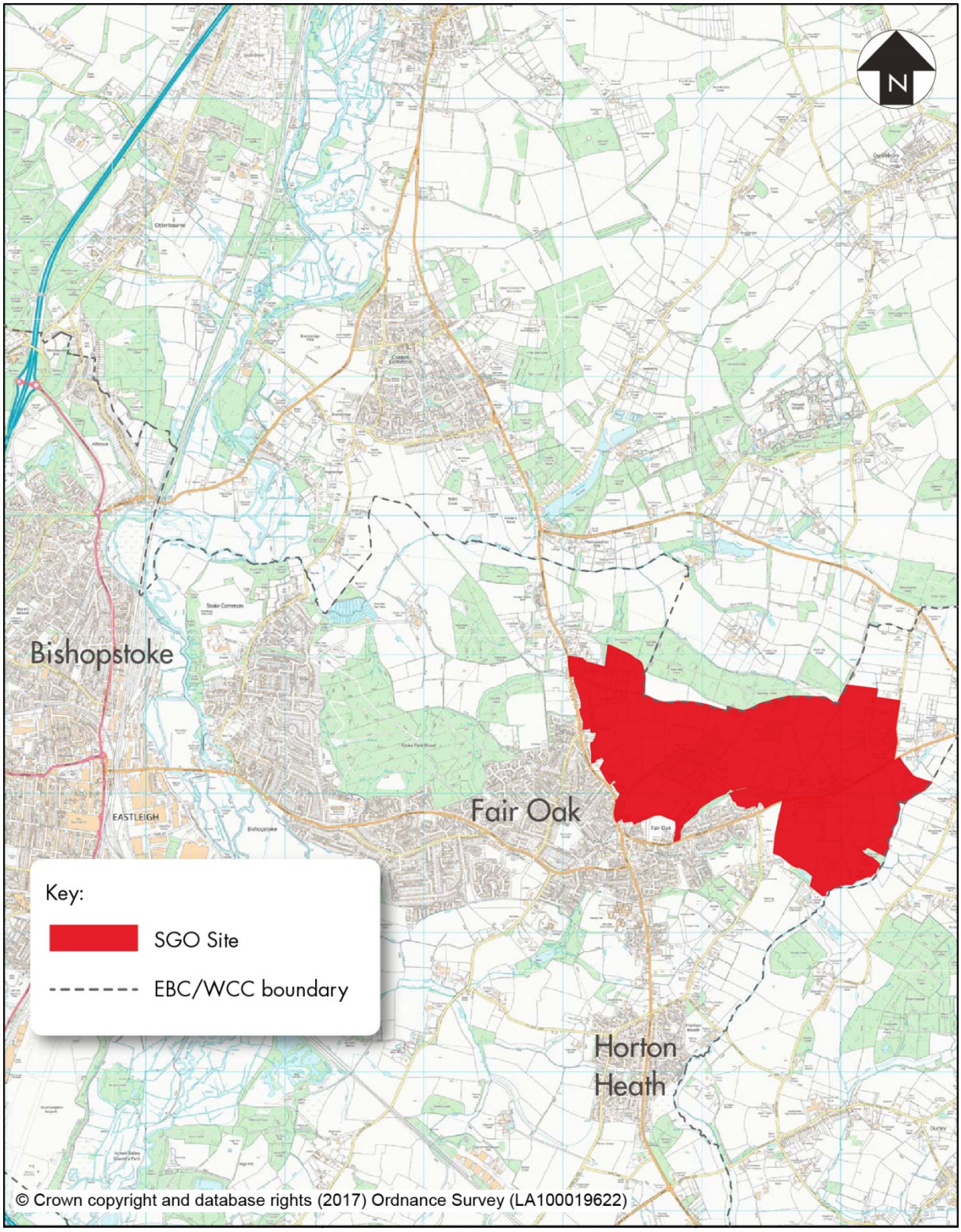


4.6 In this scenario SGOs B and C are combined. This option delivers the most homes (5,300 dwellings). This is consistent with the Council's "Development Distribution Strategy and Principles" paper (December 2016), which sought to explore an SGO towards the upper end of the 4,000 – 6,000 dwelling range, in order to achieve a degree of self-containment by providing the most facilities, and to deliver significant new infrastructure (including roads). This option is

therefore assessed in combination with a new “northern Bishopstoke link road”, to provide a new route from Fair Oak to Allbrook and the M3 at junction 12.

Table and Map 2: SGO C

Option Ref	Name	(Full Name set out in Issues and Options paper)	Estimated dwelling capacity
SGO Part B and all C (referred to as SGO C)			
SGO:	North and east of Fair Oak	(Expansion of Fair Oak to the north/north east and east)	4,204
Supplement:	None		0
Total:			4,204

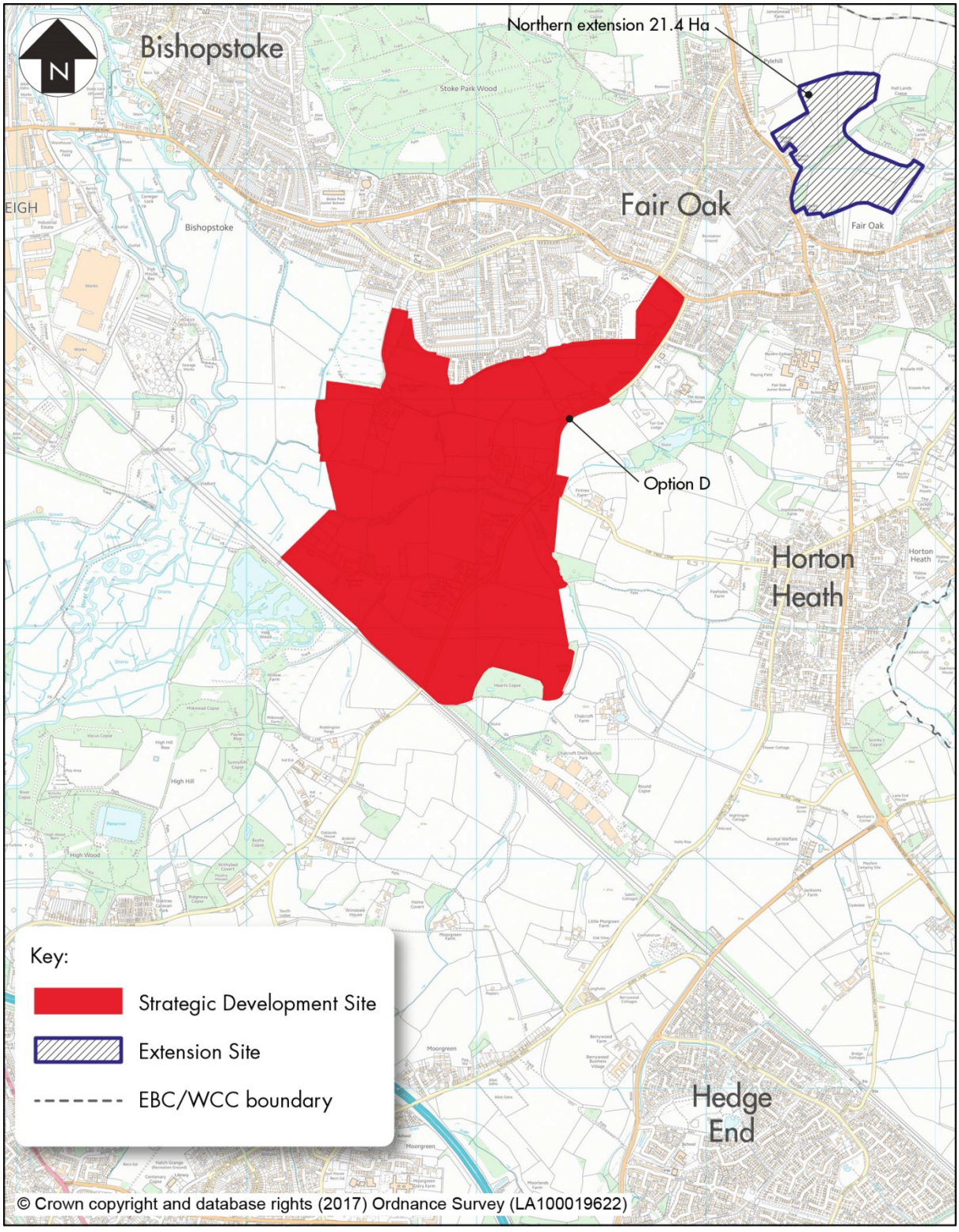


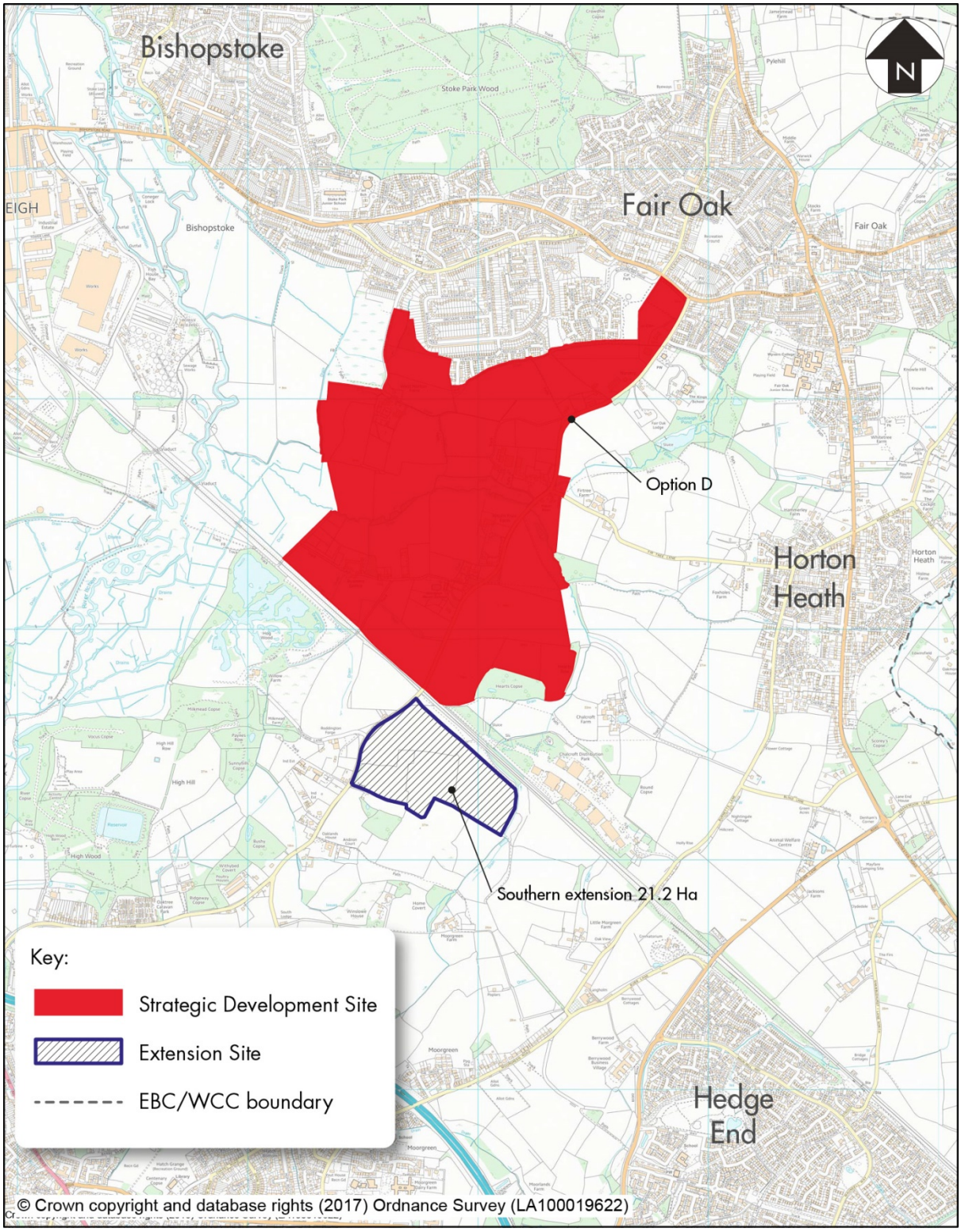
4.7 This is a part of the full option B/C, focussing on option C and the adjoining part of option B, east of Winchester Road. This option is assessed without the northern Bishopstoke link road, to help understand the implications of this.

Table and Map 3: SGO D

Option Ref	Name	(Full Name set out in Issues and Options paper)	Estimated dwelling capacity
SGO D			
SGO:	South of Bishopstoke	(Expansion of Bishopstoke to the south and Horton Heath to the west)	2,744[2]
Supplement:	North east of Fair Oak or immediately south of D		606
Total:			3,350

[2] 2 sites adjacent to this development (west of Horton Heath and Fir Tree Farm) now have planning permission for approximately 950 dwellings and 450 dwellings respectively. The 2,744 dwelling capacity figure reflects the remaining area.

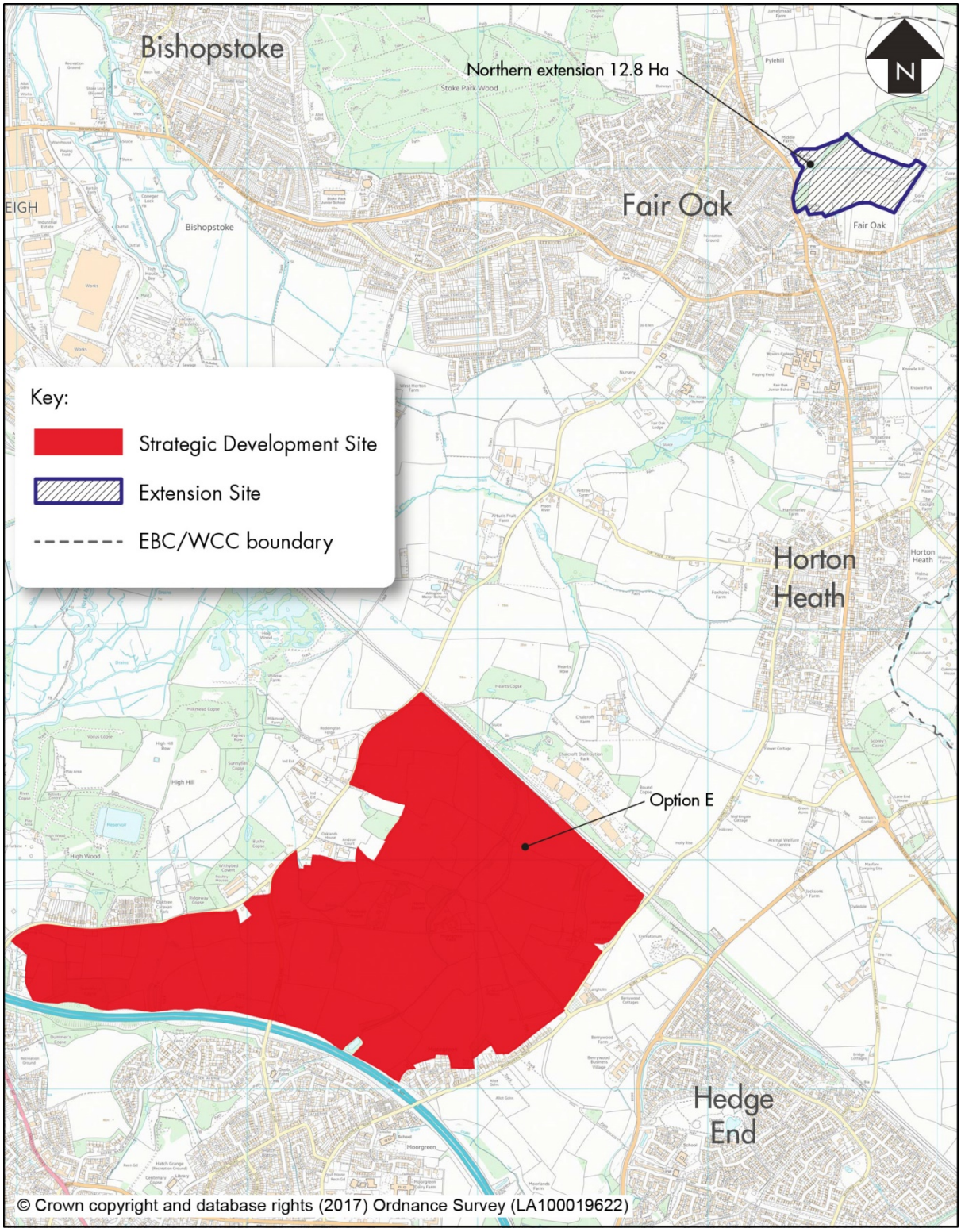

Bishopstoke
Northern extension 21.4 Ha
Fair Oak
Option D
Horton Heath
Hedge End
Key:
Strategic Development Site
Extension Site
EBC/WCC boundary
© Crown copyright and database rights (2017) Ordnance Survey (LA100019622)



4.8 Option D would be developed adjacent to the sites for 1,400 dwellings which are already permitted at west of Horton Heath / Firtree Farm. This effectively creates a new community with a combined total of 4,144 dwellings, or 4,750 dwellings if the supplementary development is located immediately to the south. Two options are assessed for the location of this supplementary development: a separate site to the north east of Fair Oak; and an expansion of option D to the south.

Table and Map 4: SGO E

Option Ref	Name	(Full Name set out in Issues and Options paper)	Estimated dwelling capacity
SGO E			
SGO:	North of West End	Extension of West End to the north of the M27	3,003
Supplement:	North east of Fair Oak		347
Total			3,350



4.9 One option has been assessed for the location of this supplementary development: a separate site to the north east of Fair Oak (a smaller version of the supplementary site related to option D).

4.10 A number of points relate to the selection of this combination of options for further more detailed assessment.

4.11 No assessment was made of options D and E combined (which would total 5,747 dwellings, in addition to the 1,400 permitted dwellings, and create the potential for a greater range of facilities) because, in physical terms, this would completely eliminate the potential for any countryside gap to be established between the major urban area of Southampton / West End and Bishopstoke / Fair Oak / Horton Heath. It would result in a broad area of continuous development from Southampton to northern Fair Oak, a distance of approximately 11 kilometres. For these reason it was considered to be an inappropriate option to assess.

4.12 The supplementary areas for options D or E are selected for the assessment based on a preliminary view of suitable sites. The Council's 'Small and Medium Greenfield Sites Assessment' (July 2017) has led to the allocation of all of the other sites in the Borough considered to be appropriate: all the sites which do not have a significant impact on countryside gaps or have another fundamental constraint (e.g. a nature conservation designation or lack of availability). Therefore the only remaining sites which could be suitable would be within parts of the SGOs not selected.

4.13 On this basis the small part of option C immediately north east of Fair Oak is considered potentially suitable as a supplement to either SGO D or E. It could integrate with the existing Fair Oak community and would not impact on countryside gaps.

4.14 In addition a small part of option E immediately to the south of SGO D and the railway line is considered as potentially suitable as a supplement to SGO D. Given the existing and proposed employment uses and the railway line this area may not integrate well with option D. It may also have some impacts on potential countryside gaps, and this is discussed further below. Nevertheless at this preliminary stage it is considered appropriate to assess this permutation further.

4.15 However the converse option for SGO E, to locate the supplementary development immediately to the north of the railway in a part of option D is not assessed. It is considered that the combination of the permitted development at West of Horton Heath / Firtree Farm, and this additional development, would further compromise the ability of this area to form an appropriate countryside gap.

4.16 The NPPF (para 158) seeks for evidence gathering to be proportionate and adequate. This is relevant to the range of options selected for further assessment. There are other permutations to the above options. However these are permutations rather than distinct and different options. The Issues and Options paper has already considered 8 options (along with its Sustainability Appraisal which split these into 23 individual locations); and this paper focuses on 5 options / permutations. This enables an understanding of other permutations to be gained as well. For example, SGO D to the south west of Fair Oak could be accompanied by larger scale supplementary development (e.g. more than 606 dwellings) to the north east of Fair Oak, which would assist in creating the overall critical mass for Fair Oak to sustain more services and facilities. Whilst this permutation is not formally assessed

in-order to keep the detailed analysis manageable, it is referred to where relevant to the consideration of option D. This is considered a proportionate approach in line with the NPPF.

5. Settlement hierarchy

5.1 The Local Plan's 'Strategy for New Development' sets out a settlement hierarchy within the Borough. The Plan explains that this hierarchy is based on the range of existing facilities in or close to each settlement (shops, leisure / community / education / health facilities, employment and public transport). This identifies the most sustainable locations with the greatest range of facilities which will help reduce the need to travel, and areas where such facilities are needed and could be provided with new development. (Local Plan paragraphs 4.6 – 4.7).

5.2 The Plan's hierarchy is set out in Table 5 below.

Table 5: Local Plan Settlement Hierarchy

Existing Settlement Hierarchy Level	Settlement
1	Eastleigh
2	Chandler's Ford Hedge End
3	Bishopstoke Botley Bursledon Fair Oak Hamble Netley Abbey West End
4	Allbrook Boorley Green Horton Heath

(Local Plan Table 1)

5.3 The SGO options set out in the preceding section are all adjacent to tier 3 and not to tier 1 or 2 settlements. However there is not considered to be the physical scope to accommodate major strategic development within the Borough adjacent to tier 1 or 2 settlements. This is for the following reasons, set out in broad strategic terms.

5.4 The combined urban area of Eastleigh / Chandler's Ford[3] is generally bounded to its north, west and south by the Borough boundary. There are two main exceptions to this. The land between Boyatt Wood and Allbrook is primarily either already proposed to be allocated in the emerging Plan (sites AL1 and AL2), or a Site of Importance for Nature Conservation. Land immediately to the south of Eastleigh consists of the Lakeside country park and then playing fields / Eastleigh football ground and the motorway / key road infrastructure, through to the Borough boundary and Southampton. To

[3] incorporating extensions to that urban area which already have planning permission, for example south of Chestnut Avenue

the east of Eastleigh lies the River Itchen Special Area of Conservation and Site of Special Scientific Interest, Sites of Importance for Nature Conservation, flood zones, Bishopstoke or Southampton International Airport. (The area beyond is already covered by SGOs D or E). Even if the countryside gaps with Allbrook, Bishopstoke or Southampton were completely developed (whilst avoiding key constraints[4]), these areas could not physically accommodate a coherent strategic new community.

5.5 With regard to Hedge End[5] , to the north there is a countryside gap through to the permitted development west of Horton Heath and Horton Heath itself. To the immediate east lies Boorley Green and its permitted extension, or a relatively narrow gap with Botley. To the south east lie Manor Farm country park and a Site of Special Scientific Interest / Site of Importance for Nature Conservation. To the south, south west and west lie relatively narrow gaps with Bursledon, Southampton and West End, and the M27 (including junctions and key link roads). To the north west lie a relatively narrow gap with SGO E and a Site of Special Scientific Interest. Even if one of the countryside gaps with Horton Heath, Botley, Bursledon, Southampton or West End were completely developed (whilst avoiding key constraints[6]), it is unlikely these areas could physically accommodate a coherent strategic new community. In any case Hedge End is a tier 2 settlement with a district centre[7] and some of the new SGOs could include a district centre as well.

5.6 Whilst none of the SGOs are immediately adjacent to tier 1 settlements, parts of SGOs B/C and D are relatively close to Eastleigh. Taking account of the constraints set out above they are effectively the potential development areas closest to Eastleigh capable of accommodating a coherent strategic new community. SGO E is further from Eastleigh once existing or proposed road links are taken into account. However SGO E is relatively close to the tier 2 settlement of Hedge End. It is also the SGO closest to Southampton city, clearly the largest settlement in the wider area.

5.7 The relative merits of the SGOs in terms of their proximity to these settlements, and their ability to provide new facilities both for new residents and for the existing adjacent communities, is set out in the Transport and Accessibility section below.

[4] ecology or flood zone designations, the country park, motorway / key road infrastructure.

[5] incorporating extensions to that urban area which have planning permission or are allocated in the emerging Local Plan, for example north east of Hedge End and to the south of Heath House Lane / Foord Road

[6] ecology or flood zone designations, the country park, motorway / key road infrastructure.

[7] Local Plan para. 5.105

6. Transport and accessibility

Introduction

6.1 The aim is to reduce the number and distance of car trips, particularly in congested areas, and promote walking, cycling and the use of public transport. This will reduce greenhouse gas emissions, local pollution, and delays across the highway network (which generate economic and / or personal costs). It also ensures that people who do not have use of a car can access jobs and facilities. The Council is undertaking a further assessment of local air quality.

6.2 The key issues to consider are as follows (greenhouse gas emissions, local pollution and delays will be affected by a combination of these factors):

- The distance which needs to be travelled. This is influenced by the proximity to jobs and facilities. For strategic growth options the proximity to local facilities is largely governed by the ability of the new community to sustain new facilities. The proximity to jobs and major shopping / leisure facilities in the wider area should also be considered.

- The ability of people to walk or cycle, which is largely governed by the proximity to local facilities as set out above (as well as planning for an attractive pedestrian and cycle environment).

- The propensity to use public transport, which is governed by the proximity to and frequency of services to destinations that people wish to reach in the wider area.

- The level of delays on the highway network, which will depend on the likelihood of people using their car (rather than walking, cycling or using public transport), the route people are likely to take when using their car, the level of congestion on that route, and the ability of development to provide strategic and local transport improvements.

6.3 The assessment below considers the transport implications of each option in a number of ways. It considers the actual and potential future provision of facilities and bus services, data of actual current trip patterns, and the results of transport model runs which forecast future trip patterns. The results of the transport model are summarised briefly in each section and set out more fully in the final section, to enable the technical interpretation regarding the model to be brought together in one place.

Car Ownership

6.4 By way of background context, Table 6 sets out car ownership levels in the Borough and those wards closest to the SGOs. This demonstrates that whilst most households do have access to a car, a proportion of households do not, and a significant proportion have access to only 1 car, meaning that at least some people within a household may not have access to a car. Therefore it is important to promote access to local facilities and public transport not only to

reduce pollution and congestion from cars, but to ensure everyone can reach jobs and services.

Table 6: Car Ownership by Household

	% No car	% 1 car	% no or only 1 car
Bishopstoke East	10.2	39.1	49.3
Bishopstoke West	19.9	40.1	60
Fair Oak and Horton Heath	7.7	34.6	42.3
West End North	12.3	42.8	55.1
West End South	11.7	43.4	55.1
Eastleigh Borough	13.3	41.2	54.5

Source: 2011 Census

Scale of local facilities available for new and existing communities

6.5 Tables 7 to 10 sets out the range of facilities and services which could be delivered within each SGO.

6.6 The overall area available for development (e.g. homes, employment and other facilities) and for open space is based on an assessment of the physical and environmental capacity of the area. In the case of open space it also relates to the relationship with surrounding environmental assets (e.g. woodland, and sensitive landscapes) or other constraints (e.g. the need to create a buffer to a motorway). This assessment has been led by the Council's masterplan for SGOs B/C; Council officers for SGO D; and the developer's masterplan for SGO E.

6.7 Similar assumptions have been used for each SGO. Nevertheless there are some modest variations, as follows. Option B/C is based on average densities ranging from 36 dwellings per hectare to 42 dwellings per hectare (dph); option C, 40 to 42 dph. and options D and E 35 dph. Options B/C can create a district centre close to both Fair Oak and significant areas of new development, enabling higher densities to be achieved (to put more people close to facilities). Option D can also create a new district centre close to Fair Oak but this would be in a relatively narrow strip of new development land between Fair Oak and Bishopstoke, limiting the opportunities for higher density development. Option E does not include a district centre (for reasons stated below). Option E is based on 44% of its area being open space

reflecting the developer's proposal. Option B/C is based on 40% of its area being open space, reflecting the Council's masterplan (although the ability for it to provide additional green infrastructure outside the policy boundary increases this percentage). Option D is based on 40% of its area being open space. These assumptions are considered broadly reasonable as a basis for assessment, although it is recognised that dwelling numbers could change to some extent.

6.8 The 30,000 sq m of employment provision reflects a judgement of Borough wide needs and the scale of provision appropriate to the size of the community. Given the interconnected nature of the local economy over the wider Southampton area, it is not considered appropriate to seek to balance the number of jobs with workers resident in one local community. By way of general comparison, the 30,000 sq m of employment provision might be expected to generate around 1,069 jobs[8], and there would be additional jobs in the retail / education sectors. SGO B/C with 5,300 dwellings might be expected to include somewhere in the region of 6,270[9] residents in work. In other words there would be at least 1 job for every 5.85 resident workers (more with the retail / education jobs). This ratio is considered to be broadly reasonable. It is inevitable that residents will seek work over a wider area, and providing more jobs within the SGO would simply encourage 'in-commuting' from elsewhere. For SGOs D and E the provision is split, focussed primarily on the main SGO with the remainder in the supplementary area.

6.9 In the case of the range of retail, education, health and community facilities this is based on a judgement relating to the scale of population resulting from the number of dwellings, informed by discussions with the education and health authorities.

6.10 Where a supplementary area adjoins the SGO (i.e. south of D) it is treated as part of that SGO, and the range of services considered on that basis. In addition where a supplementary area is detached but adjoining the same village (i.e. option D to the south west and the supplementary area to the north east of Fair Oak) this is taken into account in considering facilities which would serve a settlement wide catchment (e.g. secondary schools and district centre).

6.11 The level of likely school provision has been based on the pupil yields in the education authority's published guidance[10]. This illustrates that neither SGO D nor E would generate sufficient pupils to support a small secondary school (even when the supplementary areas are within the same catchment area).

[8] 10,000 sq m of offices at 14.4 sq m / employee = 694 jobs; 15,000 sq m light industry at 49.4 sq m / employee = 304 jobs; 5,000 sq m of warehousing at 70 sq m / employee = 71 jobs. Employee densities PUSH GL Hearn 2016 employment needs report para 5.22, taking account of HCA Employment Densities Guide 2nd edition (Drivers Jonas Deloitte, 2010)

[9] 5,300 dwellings with 2.32 people per dwelling, 60.7% of people aged 16 – 64. (HCC SAPF for Eastleigh, 2024. Similar figures for 2036 based on Demography paper). 84% of people aged 16 – 64 in employment. PUSH GL Hearn employment needs report 2016 figure 5, based on ONS annual population survey 2014/15.

[10] Developers Contributions towards Children's Services and Facilities – Hampshire County Council, November 2016

6.12 In the case of retail facilities the judgement takes into account the relationship of the SGO to surrounding centres and areas of population. (This is why, whilst SGO E can accommodate slightly more dwellings than SGO D, it is judged appropriate that it sustains a smaller centre. This is explained further below).

Table 7: SGO B/C with link road

	SGO	Supplement	Notes
Area	281ha	Not applicable	Policy area defined by Local Plan
Dwellings	5,300 homes		Average 36 dph to 42 dph
Affordable Dwellings	35%		
Employment	30,000 sq m		3% of area
Retail	1 district centre 2 local centres / parades		DC = 2,300 sq m supermarket and 2,300 sq m other retail (gross). LC = 1 designated, 1 undesignated parade
Schools	1 secondary school 3 primary schools		Based on discussions / assessment with HCC
Health	1 Community Hub (e.g. doctors' surgery)		Based on discussions with NHS CCG
Open Space	112ha		40% of area. Additional green infrastructure outside of the policy area.

Table 8: SGO C (without link road)

	SGO	Supplement	Notes
Area	224 ha	Not applicable	Policy area defined by Local Plan, to east of Winchester Road
Dwellings	4,204 homes		Average 40 dph to 42 dph
Affordable Dwellings	35%		
Employment	25,417 sq m		
Retail	1 district centre 1 local parade		DC = 2,300 sq m supermarket and 2,300 sq m other retail (gross). Local parade undesignated
Schools	1 secondary school 2 primary schools		Based on discussions / assessment with HCC
Health	1 Community Hub (e.g. doctors' surgery)		EBC assumption
Open Space			Assume broadly 40% of area. Additional green infrastructure outside of the policy area.

Table 9: SGO D

	SGO	Supplement	Notes
		(North east of Fair Oak or south of D)	
Area	148ha		
Dwellings	2,744 homes*	606	35 dph
Affordable Dwellings	35%	35%	
Employment	20,700 sq m	9,300 sq	3% of area
Retail	1 district centre	1 local centre	DC = 2,300 sq m supermarket and 2,300 sq m other retail (gross).
Schools	2 primary schools*	0	Based on discussions / assessment with HCC
Health	1 Community Hub (e.g. doctors' surgery)	0	EBC assumption
Open Space	61ha	Open space standards	SGO: 40% or area.

*The dwelling capacity is in addition to 1,400 permitted homes on the adjacent West of Horton Heath / Firtree Farm sites. It is understood that secondary school places are already being planned for these homes at Woodhouse Lane, Hedge End.

Table 10: SGO E

	SGO	Supplement	Notes
		North east of Fair Oak	
Area	189 ha		Policy area defined by Local Plan
Dwellings	3,003 homes	347 homes	35 dph
Affordable Dwellings	35%	35%	
Employment	22,590 sq m	7,410	3% of area
Retail	1 large local centre	1 local centre	SGO LC: 2,000 sq m retail (gross)
Schools	2 primary schools	0	Based on discussions / assessment with HCC
Health	1 Community Hub (e.g. doctors' surgery)	0	Based on discussions with NHS CCG
Open Space	74 ha	Open space standards	SGO: 44% or area.

6.13 All options are large enough to accommodate a significant and proportional area of employment and to sustain a local centre, primary schools and doctor's surgery. However some of the options can also sustain a greater range of facilities as well.

6.14 The Table indicates that option B/C can accommodate the most homes. This means it can support a district centre and secondary school. It also has the physical capacity to support a slightly larger area of employment in one place than the other options.

6.15 Option C can accommodate 81% of the number of homes in SGO B/C. This means it can still sustain a district centre and secondary school, although slightly less employment.

6.16 Option D on its own can only accommodate 53% of the number of homes in SGO B/C. However with the adjacent permitted development at West of Horton Heath / Firtree Farm and the option D supplementary area, this rises to 91% of the homes in SGO B/C. The supplementary area would be adjacent or within the same village catchment area. This means that SGO D can also support a district centre, and that the overall employment provision would still be in the same general area. However the additional school places required

for the permitted developments are already being planned for elsewhere[11]. SGO D and its supplementary area alone fall short of being able to sustain a small (5 form entry) secondary school. Further growth would be needed to achieve this, for example by expanding the supplementary area.

6.17 The existing adjacent communities of Fair Oak / Horton Heath would also help to support a new district centre for options B/C, C or D, for the reasons explained further below.

6.18 Option E on its own can only accommodate 58% of the number of homes in SGO B/C. Furthermore the existing adjacent community of West End would be less able to help support new facilities in option E, for the reasons explained further below; and the supplementary development associated with option E would not be within the same village catchment area. Therefore it is considered that SGO E would not be able to sustain a new district centre or a small (5 form entry) secondary school.

6.19 Overall it is likely that the people living in options B/C, and to a large extent in options C or D, will find that a significantly higher proportion of their 'day to day' and 'week to week' needs can be met within the development than residents of option E. This will encourage more walking and cycling trips (or at least local car trips which do not impact on the wider network).

6.20 In addition to the new services they would directly support, it is also important to consider how the SGOs would relate to existing settlements. Options B/C, C and D would adjoin the existing Fair Oak, Bishopstoke and/or expanded Horton Heath settlements. The physical geography of options B/C, C, D and the existing settlements is such that these options could create a new district shopping centre which could be located broadly in the centre of the overall community to effectively serve the new development and also the existing communities. It is anticipated that such a district centre would include a medium sized supermarket and a range of other shops.

6.21 Fair Oak and Horton Heath have a combined population of 9,130 people at 2017, forecast to rise to 10,888 people by 2023 as a result of permitted development[12]. This is a substantial existing population. However, Fair Oak currently only offers a limited range of facilities relative to the size of the population. Table 11 illustrates that whilst the village centre includes 27 shops, with a further 7 shops at Sandy Lane, these offer only limited 'day to day' / 'week to week' facilities for this size of population, for example: 2 small supermarkets and 2 convenience stores. Critically there is no medium sized supermarket which would enable main food shopping to be undertaken. Horton Heath currently has no shops, and a small local centre is proposed within the West of Horton Heath development.

6.22 In short, this area has a substantial population of around 10,000 people but limited shopping provision. As a result, in the Bishopstoke / Fair Oak area only 6.7% of convenience shopping spend is in Fair Oak village centre, with

[11] on the Woodhouse Lane site in Hedge End

[12] Hampshire Council Small Area Population Forecast for Fair Oak and Horton Heath ward, 2017 and 2023

significant flows to destinations further afield (Eastleigh town centre, Asda at Chandler's Ford and Sainsbury's Hedge End) (see Table 12).

6.23 The larger district centre that options B/C, C or D can sustain will therefore not only reduce the length of trips made by the residents of the new communities; but by providing a greater range of facilities for the existing population, also reduce the number of longer trips they are currently making to destinations further afield. To put it another way, this existing leakage of trade from the area represents an untapped market in the local area which will help to support a larger district centre in any of SGOs B/C, C or D.

6.24 The district centre associated with options B/C or C could be located on a main B-road, which is likely to create a more commercially viable and better connected centre. A district centre within option D located to serve the existing as well as new communities would need to be located within the narrow strip of option D land between Allington Lane and Bishopstoke. This will limit the extent of new development immediately surrounding the district centre, which limits the ability to create a form of immediate development which integrates with and supports the centre (for example higher density housing and new streets orientated towards the centre). In this regard it is considered options B/C or C have a subtle advantage over option D.

6.25 Whilst the western part of option B (west of the proposed countryside gap) appears more detached, it would actually be no further from the new district centre than a southern supplement to option D would be to its centre. In more general terms, it is simply inevitable that the outlying parts of a larger community which sustains more facilities will be further from that centre than a smaller community with fewer facilities.

6.26 Based solely on the population base of the option, option E would sustain a smaller centre in itself than options B/C, C and indeed D when adjoining permitted development at West of Horton Heath / Firtree Farm is taken into account.

6.27 Furthermore, there is no major physical barrier between options B/C, C, or D and their surrounding existing communities. Option E is separated from West End by the M27 motorway. Whilst there are two existing bridges at either end of the option E area, the motorway would at least to a reasonable extent form a physical and psychological barrier, and reduce the level of permeability between the new community and existing centre. This, and perhaps to some extent the physical geography of the existing and proposed urban areas, means it is considered less likely that this option could include a centre located in a way to effectively serve both the existing and new communities. In addition the existing West End centre is approximately 1.75 kilometres from the centre of option E which, together with the motorway barrier, would limit its ability to effectively serve the new community.

6.28 Furthermore, Table 11 illustrates that the nearest existing community, West End, already has a centre which offers a reasonable range of facilities. Although the total number of shops is no greater than that found in Fair Oak, it does include a medium sized super market (which is approximately 5 to 8

times larger than the small supermarkets in Fair Oak village centre / Sandy Lane[13]. (West End is also closer to the major out of centre retail facilities at Hedge End, including a large superstore). Consequently in the existing West End area 28% of convenience expenditure goes to West End village centre (see Table 12) and so the centre in West End is already serving a significantly higher proportion of local needs than the centre in Fair Oak. Whilst to some extent these facilities would benefit the residents of SGO E, they would be separated from and not integrated into the community of the SGO. A further 27.5% of convenience expenditure goes to the nearby Hedge End superstore. These existing nearby facilities mean there is less of a commercial basis to expand the new centre to serve either the existing or the new communities. Together with the poorer physical relationship of a new centre to the existing community, it is therefore considered there are fewer opportunities for a centre in the new SGO to 'claw back' existing shopping trips and reduce the need to travel. To put it another way there is less untapped market potential in the local area to help support a new centre. If a larger district centre were proposed with option E it is likely it would undermine the existing West End centre and encourage residents of the existing community to make longer trips.

6.29 For these reasons option E is considered less likely to be able to appropriately sustain a larger centre, is less likely to meet as wide a range of 'day to day' and 'week to week' needs locally, and so is less likely to reduce the trips of both the existing and new population.

6.30 Therefore, regarding these issues, SGO B/C, and to a large extent SGOs C and D, are considered to perform better than SGO E.

[13] Asda, West End = 1,714 sq m; Tesco, Fair Oak = 304 sq m; Co-op, Sandy Lane, Fair Oak = 224 sq m. Asda is 5.6 to 7.7 times larger.

Table 11: Range of Shopping Facilities in Existing Centres Close to SGOs

	Fair Oak Village Centre	Fair Oak – Sandy Lane	West End Village Centre
Total Occupied Shops	27	7	30
Medium sized supermarket?	No	No	Yes – Asda
Small supermarket?	Yes – Tesco Express (garage)	Yes – Co-op	No
Convenience store?	Yes – One Stop	Yes - newsagents	Yes – Londis
Post Office?	Yes	No	Yes
Pharmacy?	Yes	No	Yes
Doctors?	No	No	No
Dentist?	Yes	No	Yes
Library?	Yes	No	No

Note: As at Autumn 2017. A local centre is also proposed for the permitted development west of Horton Heath which could serve SGO D.

Table 12: Destinations for Convenience Shopping Trips

Convenience shopping destinations:	% people in B/C, C, D[14] shopping there:	Approximate distance to shopping centre from: B/C or C (D)	% people in E[15] shopping there:	Approximate distance to shopping centre from: E
Eastleigh Town Centre[16]	35.2%	5km (5km)		
Sainsbury's, Hedge End	20.6%	7km (5.5km)	27.5%	3.5km
Asda, Chandler's Ford	12.2%	9km (9km)		
West End Centre			28%	1.75km
Hedge End Centre				
Fair Oak Centre	6.7%	1km (1.5km)		
Bishopstoke Centre	0.6%	3km (2.5km)		

Based on flows of 10% or more (and also relevant local centres)

Location relative to wider range of facilities

6.31 People living in the SGOs will also travel further afield to reach jobs, shops and other facilities. The main single concentrations of such activities serving Eastleigh Borough are in Southampton, Eastleigh, Hedge End and Winchester. However jobs in particular are dispersed over a wider range of destinations.

6.32 The importance of these destinations vary to some extent between different locations in the Borough, as people choose to some extent to work or shop

[14] Based on shopping survey zone 2 – Bishopstoke / Fair Oak
[15] Based on shopping survey zones 4 – West End
[16] including edge of centre Lidl

relative to where they live (or vice versa). Tables 13 and 14 sets out current travel patterns from different existing communities close to each SGO, which helps to identify the importance of connections from each SGO to each key destination. On this basis, options B/C, C and D will look to a mixture of Eastleigh, Southampton and Winchester for employment and shopping / leisure opportunities; whereas option E will look more to Southampton (as well as to Hedge End for some retail trips). However it is also important to note that from all SGOs commuting trips in particular are distributed over a wide range of destinations with only around 50% travelling to these key destinations.

Table 13: Destinations for Employment

Work destinations	% people in B/C or D: working there[17]:	Approximate distance to work destination centre from: B/C (D)	% people in E working there[18]:	Approximate distance to work destination centre from: E
Southampton	12%	13km (10.5km)	22%	8.5km
Eastleigh	18%	5km (5km)	8%	7km
Hedge End	(3%)	7km (5.5km)	9%	3.5km
Winchester	17%	12.5km (14.5km)	10%	16.5km
Elsewhere	50%		51%	

(Commuting flows of 5% or more)

[17] Based on 2011 commuting patterns of super output areas – middle layers: Bishopstoke North; Bishopstoke; Fair Oak

[18] Based on 2011 commuting patterns of super output areas – middle layers: West End; Hedge End North

Table 14: Distances for Comparison Shopping Trips

Comparison shopping destinations	% of people in B/C, C plus or D[19] shopping there:	Approximate distance to shopping centre from: B/C, C plus (D)	% of people in E[20] shopping there:	Approximate distance to shopping centre from: E
Southampton City Centre	12.7%	13km (10.5km)	27.5% - 27.8%	8.5km
Eastleigh Town Centre	24.3%	5km (5km)		7km
Hedge End retail park	21.1%	7km (5.5km)	21.4%- 21.9%	3.5km
Internet / special forms of trading	25.1%		16.7%- 17.4%	

Based on flows of 10% or more

6.33 Option E is closest to Southampton, the largest single destination for employment, shopping and leisure facilities. It is 8.5 kilometres from Southampton city centre, whereas option D is 9.5 kilometres away and options B/C and C are 13 kilometres away.

6.34 Table 15 sets out a calculation of the average distance travelled to work, which should be treated as relatively broad brush although is drawn from actual Census data[21].

[19] Based on shopping survey zone 2 – Bishopstoke / Fair Oak

[20] Range based on shopping survey zones 4 – West End and zone 5 – Hedge End / Botley

[21] The Census data is based on existing wards, which will not reflect the centre of population gravity in the new SGOs. It sets out the proportions of people who travel within particular distance brackets (0-5km, etc). The Council has calculated the average using the mid point (2.5km, etc.).

Table 15: Potential Average Distance Travelled to Work from each SGO

Average distance (km) travelled from:	Option B/C Option D	Option E
Bishopstoke East	12.6	
Bishopstoke West	12.2	
Fair Oak and Horton Heath	14	
Hedge End Grange Park		12.6
Hedge End Wildern		11.6
West End North		10.7
Likely range of average distance travelled for each SGO:	**12.2km – 14km**	**10.7km – 12.6km**

Calculation based on 2011 Census

6.35 This suggests that the average distanced travelled to work from the existing wards close to option E is 10.7km to 12.6km, and from those close to options B/C/D are 12.2km to 14km. In broad brush terms this suggests that people in options B/C/D will need to travel further to work than those living in option E, perhaps around 11% to 14% further. This is considered to be a modest benefit for option E. It is considered there are two reasons this difference is relatively small. First, whilst Southampton is the largest single destination, overall employment is dispersed across a wide range of locations, which significantly reduces the benefits to option E of Southampton being closer. Only 19% of employment in South Hampshire is in Southampton, and based on existing commuting patterns (Table 13), only 22% of residents in option E are likely to work in Southampton, with 78% of residents working elsewhere. The second reason is that there tends to be at least some geographical relationship between where people live and work. Therefore whilst 22% of residents of option E are likely to work in Southampton which is 8.5 kilometres away; only a slightly lower proportion of option B/C/D residents, 18%, are likely to work in Eastleigh, which is closer at only 5 kilometres away. Conversely a significantly lower proportion of option B/C/D residents are likely to work in Southampton. This enables these options to support more shorter trips and fewer longer trips than might be expected from just considering their relationship with Southampton. The main message is that the relative

difference between the wider travel patterns of different SGOs are relatively subtle and nuanced.

6.36 Regarding weekly and monthly shopping / leisure trips, option E is closest to Southampton city centre, 8.5 kilometres away. However options B/C/D are closer still to Eastleigh town centre, 5 kilometres away. Eastleigh town centre is significantly smaller than Southampton city centre. However it still provides a range of 'week to week' and 'month to month' shopping and leisure facilities. Therefore whilst, based on existing shopping patterns, around 27% of residents of option E are likely to shop in Southampton; almost as a high a proportion, around 24%, of residents of options B/C/D are likely to shop in Eastleigh town centre, involving a shorter journey. This will also support trade in the Borough's main town centre. Option E is close to Hedge End retail park, 3.5 kilometres away, which will also help shorten trips. Hedge End retail park is an 'out of centre' location and so option E would not support an existing town centre in the Borough to the same degree. Overall for weekly and monthly shopping trips the position is mixed, and in general terms each option is considered to be similarly matched with the others (for slightly different reasons).

Transport Model

6.37 The transport model results indicate that the overall average distances travelled to and from the Borough are very similar for a Local Plan based on any of the SGO options. The average distance travelled is only very marginally longer (about 30 - 70 metres longer) with a Local Plan based on SGO B/C. It is considered that this supports the overall analysis above. To the extent that SGO B/C will generate longer trips because it is further from Southampton, these differences are likely to be relatively nuanced and largely counteracted by SGO B/C providing more local facilities (for new and existing residents), reducing the distance of local trips.

6.38 One of the reasons to seek to reduce the distance travelled is to minimise 'greenhouse gas' emissions. The transport model results indicate that the total carbon dioxide emitted from trips to and from the Borough are also very similar with a Local Plan based on any of the SGO options. The total carbon dioxide emitted with a Local Plan based on SGO B/C (with the link road and 'do more' junction improvements) is actually marginally less than for the other options, despite this scenario accommodating more development and generating marginally greater average trip distances. It is considered that this is likely to be because a Local Plan based on SGO B/C generates a lower increase in congestion.

6.39 The transport model results indicate that a Local Plan based on SGO B/C leads to a higher proportion of trips being undertaken on foot or by cycle. It is considered this reflects the ability of SGO B/C to provide a greater range of facilities locally for new and existing residents.

6.40 Further details are set out in the transport model section.

Public Transport

6.41 The assessment in this section summarises the Council's public transport study[22]. Clearly in considering existing and future rail and bus provision, it is important to consider the likely level of service to the key destinations that people want to reach, and these destinations vary to some extent depending on the location of the SGO.

6.42 Based on existing flows to employment and comparison shopping destinations, as set out in Tables 13 and 14, the key destinations to be able to reach from:

- Options B/C, C or D are considered to be (in broadly equal measure) Eastleigh, Southampton and Winchester;

- Option E are primarily Southampton, followed to a lesser (and broadly equal) extent by Hedge End, Winchester and Eastleigh.

6.43 In the case of each SGO, these destinations are likely to cumulatively account for around 50% of employment destinations.

6.44 Table 16 below sets out the existing levels of public transport use on the journey to work from existing communities close to the SGO, and other areas of note.

Table 16: % of Public Transport Use on Journey to Work

Ward	Train	Bus	Total
Fair Oak and Horton Heath	2.1	2.9	5.1
West End North	1.6	3.7	5.3
Hedge End Grange Park	6.2	1.3	7.5
Hedge End Wildern	2.2	2.4	4.6
Eastleigh Central	8.5	2.5	11
Borough Average	3.8	2.9	6.7

Source: 2011 Census

[22] Strategic Growth Option sites – Public Transport / Bus Service Options / Viability Study

6.45 At this stage it is important to note that it is possible that only around 5% of trips to work from any of the SGOs may be made by public transport (on the basis of the data for Fair Oak and Horton Heath and West End North, the two existing communities closest to the SGOs). The Borough wide figure is 6.7% and the transport model results generate a similar (although slightly lower) Borough wide figure for all trips, ranging from 4.3% - 4.9%.

6.46 Returning to the work trip data in Table 16, across the Borough Eastleigh Central achieves the highest percentage of trips made by public transport, at 11%. Eastleigh Central has the greatest level of public transport provision, anticipated to be significantly greater than that which could be achieved in any of the SGOs. In short, even with improvements to public transport provision, it is considered likely that only a relatively small proportion of trips from the SGOs will be made by public transport.

6.47 This provides a useful context to the following analysis. The vast majority of trips out of any of the SGOs are likely to be made by car, and it is important to plan for car use appropriately to minimise congestion and pollution. Nevertheless it is still important to consider the ability of SGOs to sustain public transport and to plan positively for such provision in accordance with national and local policy. The availability of public transport will enable a reduction in car use and create more transport choices to enable people to shift modes in the future if car use becomes more constrained (e.g. as a result of congestion or national policy decisions). It also enables people who do not have access to a car to get to work and other facilities. Further points about rail use are made below.

Rail

6.48 SGO B/C is not close to a rail line and could not be directly served by rail services. The core of SGOs B/C and D are 5 kilometres by road from Eastleigh rail station, which offers 3 services an hour to Winchester and London, and 2 services an hour to Southampton. They are 7.5 kilometres from Southampton Parkway, which offers additional fast services to London and Southampton, and direct services to the north of England.

6.49 The core of SGO E is approximately 2.5 kilometres from Hedge End rail station, which generally offers 1 service an hour to Eastleigh, Winchester, London[23] and Portsmouth, although this increases in the peak hour[24]. It does not offer a direct service to Southampton.

6.50 The southern limit of option D and the northern limit of option E are adjacent to the Eastleigh – Fareham railway line. This creates at least the potential for the SGO to be served by rail, with the same service as set out for Hedge End station as above. Table 16 above illustrates the proportion of people travelling to work from Hedge End by train. In the closest ward (Hedge End Grange Park) 6.2% of people travel to work by train. In the next closest ward

[23] Slow stopping service or change at Eastleigh.

[24] 08.00 to 09.00 departing: 3 trains to Eastleigh; 2 to Winchester and London Waterloo; 17.30 to 18.30 arriving: 2 from Eastleigh, Winchester and London Waterloo. As at Summer 2018.

only 2.2% of people travel to work by train. In short it is considered that the provision of a new heavy rail station with SGOs D or E would only generate a modest level of rail use. Interestingly Hedge End Grange Park ward shows relatively low proportions of bus use, suggesting that the higher rail use may in part come from people who would otherwise have caught the bus rather than increasing public transport use overall. Hedge End Grange Park only achieves up to 2.4% greater public transport use than areas which do not have a rail station (Fair Oak and West End).

6.51 The promoter of SGO E is safeguarding land for but is understood not to be proposing the provision of a new rail station, simply recognising it is a possibility in the future. There are some key factors in determining whether a rail station is likely to be provided. These are cited in Network Rail's "Investment in Stations" document (June 2017), discussed further in the Council's background paper on Public Transport and summarised here. The key issues are demonstrating a positive business case for the investment (based on likely net additional patronage, capital and on-going operating costs based on an appropriate design of station, and the relationship with Train Operating Companies [TOC]); demonstrating a station would fit within the wider operation of the network and rail route utilisation strategies. A new station would ultimately require approval and agreements from Network Rail and other parties such as the TOC. A new station could be funded by the developer and/or LEP or Network Rail (via an agreed revenue stream from a TOC, potentially supported by the Department for Transport).

6.52 In terms of the potential for a new station in this location, the first issue is the prospect of a station being funded. It should be noted that rail patronage in the area (for example at Hedge End station) has grown considerably in recent years. For a new station to be considered by Network Rail it would need to be demonstrated that investment in an existing station would not meet objectives (and in this regard it is noted that Hedge End station is 2.5 kilometres away); and that a new station would offer better value for money based on a full cost-benefit analysis. It is understood that the promoter of option E is not progressing such an assessment.

6.53 A new station would be required to have long platforms for 12-car trains and have access for those with mobility difficulties. Such a station is likely to cost in the region of £8 - £9 million. The funding for new stations generally comes from developers or the public sector. In addition the rail industry would need to be confident that it could fund the long term revenue cost implications (the cost of operating the station and any lost revenues from nearby stations and from slightly longer journey times).

6.54 It is considered unclear whether SGOs D or E (totalling around 3,000 dwellings) would on themselves fund such capital costs for a new station. This is on the basis that the SGO E developer is not understood to be proposing a rail station, that new stations elsewhere generally relate to larger development, and that either SGO would need to fund other infrastructure as well. Examples of recent station openings are associated with larger developments (e.g. 4,270 – 6,550 dwellings) and are on single track lines requiring only one platform (and so substantially reduced costs). A part of the

permitted development west of Horton Heath development would lie within a 800 metre convenient walking distance of such a station, although the development has not been designed to integrate with or help fund such a station. A rail station would generally be on one edge of either option D or option E if pursued individually, so would not benefit from a '360 degree' customer base. On this basis it is considered unlikely that SGOs D or E would be able to fund the delivery of a new station.

6.55 Furthermore a new station would clearly only be viable if trains were able to stop at the station. An extra stop by trains (which run through to London Waterloo) would take in the region of 3 minutes. Rail path headways on the approach to Waterloo at peak times are no more than 3 to 5 minutes and therefore such a delay could have significant timetabling implications for the wider mainline. It may also have implications for junctions at Woking, Basingstoke and the single track section between Botley and Fareham. It is understood that the site promoter is not progressing such discussions with Network Rail and the Train Operating Companies.

6.56 The Council has discussed the likelihood of a new rail station being provided with Network Rail. Network Rail consider that the Council's assessment set out above and in the SGO public transport assessment (July 2017) is likely to be broadly correct: that the development in options D or E is unlikely to deliver a new rail station, for the reasons stated. Network Rail have also indicated that neither they nor train operating companies are likely to fund new stations and that funding would have to come from the developer or public sector. Network Rail intend to consider the detail of the timetabling issues further.

6.57 It is worth re-iterating at this point that the Council would have a fundamental objection to developing SGOs D and E together as this would not maintain a countryside gap between Southampton / West End and Bishopstoke / Fair Oak / Horton Heath. In any case the analysis above suggests it would still be unclear whether this would deliver a station, and even if it did it would only be likely to result in a small shift from car to public transport use.

6.58 In the past there have been proposals to construct a rail chord to the south of Eastleigh station so that trains from the Hedge End railway line could run directly into Southampton. Whilst this was identified in the previous London and South East Rail Utilisation Strategy (RUS), Network Rail have confirmed that there was not a business case for it, that it is not identified in the current Wessex RUS to 2043, and that there is little prospect the chord would be delivered unless the Solent Metro was progressed. It is possible that trains could reverse into and out of Eastleigh station, although it is unclear whether the TOCs would wish to use any minimal remaining capacity on the Eastleigh – Southampton mainline for additional local as opposed to London bound services.

6.59 More generally Network Rail will be pursuing various strategic studies over the next 2 years, including on Solent Connectivity. A half hourly service is likely to be possible on the Eastleigh to Fareham line.

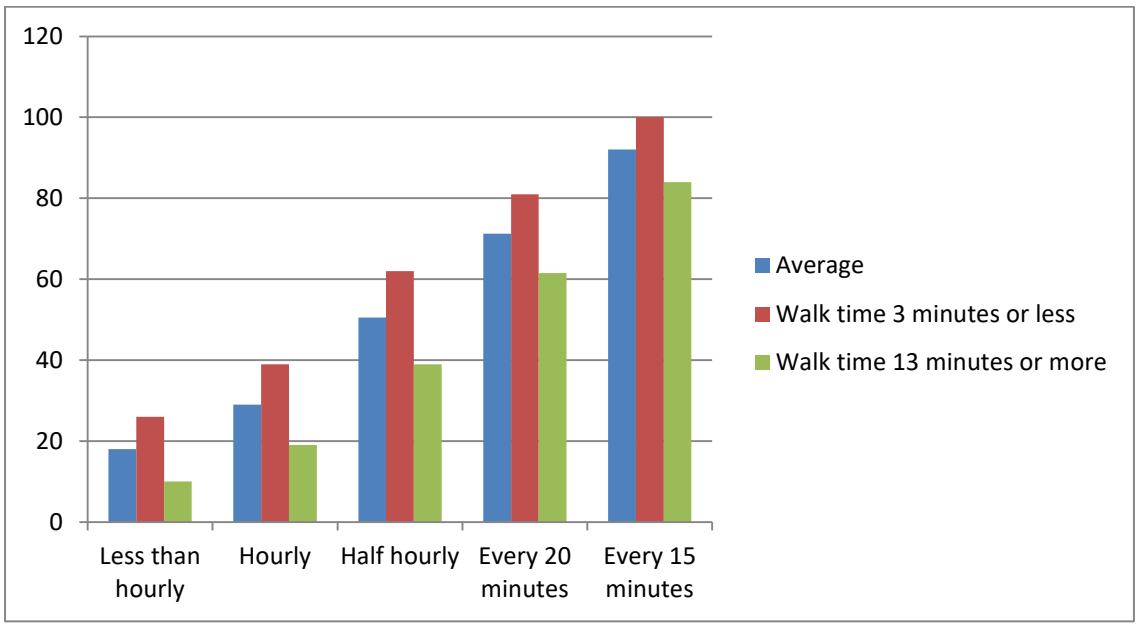
6.60 The Solent Local Enterprise Partnership's Strategic Transport Investment Plan (2016) identifies the concept for a Solent Metro. The LEP is currently undertaking a feasibility study into this, focussing on a phase 1 within the Southampton to Eastleigh corridor. This is likely to have major feasibility issues, for example the likely overall very substantial capital cost and the ability to physically expand rail capacity along the existing Eastleigh to Southampton rail line. The potential for this project is at a very early stage: it is un-costed, initial feasibility is to be completed, and therefore its deliverability is considered to be at best highly uncertain at this stage. If it were to be delivered over the longer term, it may then allow the potential for an extension along the Eastleigh to Fareham rail line. However this is not being actively considered at this stage. If this were to occur, it is likely that a metro station would be able to serve either option D or E and provide a direct service into Southampton, which would be a benefit for either of these options, and may show (at least to some extent) higher proportions of rail use than indicated by the data set out above in relation to Hedge End Grange Park and the current heavy rail service. However the long term prospects of this at this stage are considered at best highly uncertain.

6.61 In summary options B/C do not have the potential to be directly served by rail. Option E is closer to an existing rail station (although it still lies beyond a short walking distance). Option D or E also offer in theory the potential to be served by heavy or light rail services. In the case of heavy rail, the likelihood of this potential being realised is considered to be low, would not serve Southampton, and is considered unlikely to significantly increase overall public transport patronage. With regard to light rail the potential of this being delivered is considered to be very uncertain at best. On this basis options D or E are considered to have a slight advantage over options B and C with regard to rail provision.

Bus

6.62 Data shows, not surprisingly, that people are more likely to use buses when the routes run close to where they live and a frequent service is offered. Figure 1 below illustrates that the number of bus trips increases significantly as service frequencies increase. The graph also shows that the number of bus trips falls away when people have further to walk to a bus stop. However it is important to note that this drop in bus patronage is far less significant when a frequent service is offered. In other words a frequent bus service will be more effective at encouraging bus patronage across a wider residential area around the route. As a 'bench mark' for the SGOs it is considered that a bus service with 20 minute frequency within 400 metres of significant parts of the SGO would provide a good or very good service.

Figure 1: Number of annual bus trips per person based on frequency of bus service.



Source: DTLR, 2001

Existing Provision

Option B/C and Option C

6.63 The following services serve the general area:

Table 17: Existing Bus Services, SGO B/C and C

Service	Via	To	Usual Frequency	Serves development? Within 400 metres of:	Commercially viable?
Blue star 2	Sandy Lane / Winchester Road / Fair Oak Village Centre	Eastleigh, Portswood, Southampton	Every 20 minutes	Small part of site	Yes
Stagecoach 69	Winchester Road / Fair Oak Village Centre / Mortimers Lane	Winchester; Bishops Waltham / Fareham	Every 60 minutes	Parts of site	Yes
Xelabus X9	Winchester Road / Sandy Lane / Fair Oak Village Centre	Eastleigh via Colden Common; Hedge End / Bishops Waltham	Every 60 minutes	Parts of site	No (HCC support)

6.64 It is possible that in the future some of these services could be diverted / extended to serve more of the SGO, particularly if routed via the new district centre and higher density dwelling areas, to increase the customer base. The bus operators would need to balance this against the loss of established custom along existing sections no longer served, or the effects of a longer route. The SGO masterplan can take into account the form, density and location of development which is likely to maximise the ability of bus operators to viably extend their service.

Option D

6.65 The following services serve the general area:

Table 18: Existing Bus Services, SGO D

Service	Via	To	Usual Frequency	Serves development? Within 400 metres of:	Commercially viable?
Blue star 2	Sandy Lane / Winchester Road / Fair Oak Village Centre	Eastleigh, Portswood, Southampton	Every 20 minutes	Very small part of site	Yes
Stagecoach 69	Winchester Road / Fair Oak Village Centre / Mortimers Lane	Winchester; Bishops Waltham / Fareham	Every 60 minutes	Very small part of site	Yes
Xelabus X9	Winchester Road / Sandy Lane / Fair Oak Village Centre	Eastleigh via Colden Common; Hedge End / Bishops Waltham	Every 60 minutes	Very small part of site	No (HCC support)

6.66 It should be noted that only a very small part of the potential option D area lies within 400 metres of these services, and that about half of this area is protected open space. Therefore these services will not effectively serve option D. (The X10 service travels down Burnetts Lane and would not be within 400 metres of the new option D beyond permitted development).

Option E

6.67 The following services serve the general area:

Table 19: Existing Bus Services, SGO E

Service	Via	To	Usual Frequency	Serves development? Within 400 metres of:	Commercially viable?
Xelabus X10	Moorgreen Road / Burnetts Lane	Bitterne / Southampton; Bishops Waltham	Every 60 minutes	Part of site	No (HCC supported)
First 8	Townhill Way / West End High Street	Bitterne / Southampton; Hedge End superstores and rail station	Every 30 minutes	No	Yes
Xelabus X4	West End High Street	Southampton Airport; West End / Hedge End	Every 60 minutes	No	Yes

6.68 There is only one hourly service which serves part of the site. This is not commercially viable and requires support. The more frequent and viable services are further away, serving West End. Diverting these routes to serve option E would mean the routes could no longer serve West End centre or would involve a circuitous route. It is considered that bus operators are unlikely to implement either solution.

6.69 Neither options B/C, D or E have very good bus services serving the whole development location. This is not surprising as these locations are currently green fields. However options B/C or C are considered to have the better existing service to key destinations. There is one frequent service (to Eastleigh / Southampton) or one hourly service (to Winchester) which run immediately past the SGO location, all of which are commercially viable. Option D essentially has no services within 400 metres. Option E has only one hourly service to a key destination (Southampton) which runs immediately passed the SGO location, and this is not commercially viable. The nearest 30 minute frequency service to Southampton lies about 1 kilometre from the nearest edge of the main SGO location. It is also important to note that the existing Solent Blue Star 2 service could be extended slightly to serve options B/C or C.

Future Provision

6.70 The assessment of likely future bus provision is based on the following factors:

- The 'Peak Vehicle Requirement' – the number of buses required to operate the route at the busiest time of day, which depends on the length of the route and frequency of service.

- The estimated level of patronage for the service – based on the expected total number of trips generated from the development, destination of those trips, and share of those trips undertaken by bus. This in turn depends on

the frequency of the bus service and how close people live to that service[25]. .

- Patronage is based on the numbers of people living in the SGO and in any other new development in the area (e.g. the West of Horton Heath / Firtree Farm permissions).

6.71 It should be noted that the assessment does not include the following factors:

- Any patronage from existing residents living along the route from the SGO to the final destination. However these residents are generally served by existing bus routes. Any patronage from this source is likely to be taken primarily from and reduce the viability of existing bus services. Therefore the comparative analysis is based on new developments both for simplicity and to demonstrate whether they are likely to be able to sustain their own bus route without affecting existing services.

- Trips to schools and colleges (for which there is a lack of data). However this sector provides an important element of demand for bus services. Therefore it is likely that bus patronage levels have been underestimated, and services will be more viable than indicated below.

- Trips into the SGO employment areas.

6.72 The public transport background paper analyses a number of routes from each SGO. The summary below focuses on those 30 and 20 minute frequency services which score best for each SGO to a variety of key destinations, to ensure the comparison is on a 'level playing field'.

Option B / C

6.73 The scenarios below are based on assuming this option will accommodate 5,000 dwellings. This is a slight under estimate of the latest dwelling capacity so the analysis presents a slightly cautious approach with regards to viability.

Table 20: Potential New Bus Routes, SGO B/C

From	Via	To	Frequency	PVR required	PVR achieved	PVR % from required
Route 1A						
Fair Oak Village Centre	Whole SGO	Eastleigh (via Twyford Road)	30 min	3	2.2	-27%*
			20 min	4	3.2	-20%*
Route 1B						
West Horton Heath	Fair Oak Village Centre	Eastleigh (via Twyford Road)	30 min	3	2.8	-7%
			20 min	5	4	-20%

[25] These estimates are based on a mixture of national and local data and research. Trip destinations are based on travel to work, shopping and leisure data.

	and through whole SGO					
Route 1C						
Fair Oak Village Centre	Whole SGO	Eastleigh; Southampton (via Twyford Road) (via shortest route)	30 min	5	3.3	-34%
			20 min	7	4.7	-33%
Route 1D						
West Horton Heath	Fair Oak Village Centre and through whole SGO	Eastleigh and Southampton (via Twyford Road) (via shortest route)	30 min	5	4.2	-16%
			20 min	8	6	-25%
Route 2A						
Fair Oak Village Centre	Whole SGO	Colden Common; Winchester	30 min	4	1.7	-57%
			20 min	5	2.4	-52%
Route 2B						
West Horton Heath	Fair Oak Village Centre and through whole SGO	Colden Common and Winchester	30 min	4	2	-50%
			20 min	6	2.9	-52%

*via Boyatt Wood (which extends the journey time by approximately 5 minutes), this can combine with an existing service (Bluestar 5) and achieve a PVR which falls short of the threshold by -10% (30 min) and -26% (20 min).

Option C

6.74 The scenarios below are based on assuming this option will accommodate 4,204 dwellings.

Table 21: Potential New Bus Routes, SGO C

From	Via	To	Frequency	PVR required	PVR achieved	PVR % from required
Route 1A						
Whole SGO	Fair Oak Village Centre	Eastleigh	30 min	2	1.8	-10%
			20 min	3	2.5	-17%
Route 1B						
West	Whole	Eastleigh	30 min	4	2.9	-28%

Horton Heath / Fair Oak	SGO	(via Boyatt Wood)	20 min	6	3.9	-36%
Route 1C						
Whole SGO	Fair Oak Village Centre	Eastleigh; Southampton	30 min	5	2.6	-48%
			20 min	7	3.7	-47%
Route 1D						
West Horton Heath / Fair Oak	Whole SGO	Eastleigh; Southampton (via Boyatt Wood)	30 min	6	4	-33%
			20 min	9	5.5	-39%
Route 2A						
Fair Oak Village Centre	Whole SGO	Colden Common; Winchester	30 min	3	1.5	-50%
			20 min	5	2.1	-58%

Option D

6.75 The scenarios below are based on assuming this option will accommodate 2,744 dwellings. (If the supplementary development of 606 dwellings were located immediately south of option D in the same location, albeit separated by the railway this might slightly improve the performance of option D described below). The services below are also generally based on serving the adjacent permitted development at west of Horton Heath / Firtree Farm.

Table 22: Potential New Bus Routes, SGO D

From	Via	To	Frequency	PVR required	PVR achieved	PVR % from required
Route 1A						
West of Horton Heath	Whole SGO	Eastleigh	30 min	2	1.9	-5%
Route 1B						
West Horton Heath	Whole SGO and Eastleigh	Southampton	30 min	4	3.1	-23%
			20 min	6	4.4	-27%
Route 1C						
North east of Fair Oak	West of Horton Heath and Whole SGO	Eastleigh	30 min	3	2.2	-26%
Route 1D						
North east of Fair Oak	West of Horton Heath; Whole SGO; Eastleigh	Southampton	30 min	5	3.5	-30%
			20 min	7	4.9	-30%
Route 3						
Eastleigh	Whole SGO; Bitterne	Southampton	30 min	4	2	-51%
			20 min	6	2.9	-49%

Option E

6.76 The scenarios below are based on assuming this option will accommodate 3,003 dwellings.

Table 23: Potential New Bus Routes, SGO E

From	Via	To	Frequency	PVR required	PVR achieved	PVR % from required
Route 1A						
SGO	whole SGO	Bitterne; Southampton	30 min	3	2.1	-30%
			20 min	5	3	-40%
Route 1C						
Hedge End	whole SGO	Bitterne; Southampton	30 min	5	2.6	-48%
			20 min	7	4	-43%
Route 2B						
Fair Oak Village Centre / West of Horton Heath	whole SGO	Bitterne; Southampton	30 min	4	2.4	-40%
			20 min	6	3.4	-43%
Route 2C						
Winchester / Fair Oak / West of Horton Heath	Whole SGO	Bitterne; Southampton	30 min	6	3.5	-42%
			20 min	8	5	-37%
Route 3B						
Eastleigh / Fair Oak / West of Horton Heath	Whole SGO	Hedge End	30 min	4	1.4	-65%

6.77 Whilst each SGO presents negative figures at this stage, it should be noted that the assessment is relatively cautious. It does not include education trips, which are a key sector for buses, or trips to employment in the SGOs. In addition it does not make any allowance for operational efficiencies (particularly for higher PVR services) to minimise lay over times or create interworking arrangements.

6.78 The following commentary develops the Public Transport assessment by setting out the percentage by which services fall short of being fully viable at this stage. This gives added perspective and enables comparison between different SGOs.

6.79 Comparing 'like with like' services as much as possible, a service starting in each SGO (or SGO and immediately adjacent area), to each relevant key destination performs as follows. From option B/C services fall under the PVR threshold by 20 – 27% (to Eastleigh), although this reduces from 20% to 10% under the threshold via Boyatt Wood (30 minute frequency only); 33-34% (to Southampton, noting also that this route has a significant journey time of 65 minutes) and 52 – 58% (Winchester). From option C services fall under the PVR threshold by 10 – 17% (to Eastleigh); 47 – 48% (to Southampton, with long journey times); and 50 – 58% (to Winchester). From option D services fall under the PVR threshold by 2% (to Eastleigh) and 23 – 27% (to Southampton, again noting the long journey time). From option E services fall under the PVR threshold by 30 – 40% (Southampton, with a journey time of 40 minutes).

6.80 With respect to options B/C, once the West of Horton Heath developments are included the performance to two key destinations noticeably improves, so that the PVR only falls below the threshold by 7 – 20% (Eastleigh) and 16-25% (Southampton). For option C, the route to serve West of Horton Heath erodes viability for Eastleigh although for Southampton reduces the viability gap to 33 – 39%. For option D, extending the route to serve the supplementary development north east of Fair Oak erodes viability. For option E, extending the route to serve Fair Oak village centre / west of Horton Heath or Hedge End also erodes viability. (In other words, in these cases the added cost of extending the route are greater than the extra revenues generated).

6.81 Although other destinations are individually less important to reach from option E, they cumulatively account for a significant proportion of trips. From option E these services fall under the PVR threshold by 37 - 65% (Winchester, Hedge End, Eastleigh).

6.82 In general, based on the best results for each option (combining developments where this is of benefit), options B/C and D are considered to perform broadly the same. Taking B/C and D in turn, the best 30 minute frequency services to Eastleigh fall 7% and 2% short of the PVR threshold; and to Southampton, 16% and 23% short. Options C achieves a figure for Eastleigh 10% short and for Southampton 33% short, so performs less well than either B/C or D to either destination. Options B/C and D both perform better across this range of key destinations, compared to option E's performance relative to its single key destination. The best results for option E to Southampton fall 30% short of the threshold. For example, this viability gap is around 2 or 3 times greater than the gap for services from options B/C to Eastleigh and Southampton. Furthermore option E's single key destination is likely to serve a smaller proportion of overall trips than the range of destinations served from option B/C and D. To put it another way, the viability gap that options B/C and D need to close to achieve a commercially sustainable bus service is generally less than for option E. This is primarily a result of the larger scale of development / passenger numbers that can be created in SGO B/C, or by D in combination with permitted development West of Horton Heath.

Transport Model

6.83 The transport model runs were undertaken on a different basis. The runs focus more on the level of public transport patronage which would be achieved if the services were viable. The Local Plan scenarios based on different SGO locations reflect the existing bus services as above. However they assume a new bus service is provided for each SGO on a 30 minute frequency to the relevant key destinations irrespective of the potential viability of those services as above. The only difference (other than the routes / destinations of these services) is that SGO B/C and C also benefit from an extension of the existing Blue Star 2 service into the development. This has the benefit of creating a 'level playing field' for assessment in the transport model but should be considered alongside the evidence on the potential viability of these services.

6.84 The transport model indicates that around 43% to 49% of trips would be made by public transport. It also indicates that a Local Plan based on SGO D generates the greatest increase in public transport patronage, followed by SGO B/C, with SGOs C and E generating the lowest increase.

6.85 It is considered likely that SGO D generates the greatest benefit because its new bus route is based on the shortest distance to a key destination (Eastleigh), creating an attractive journey time.

Transport Model Results

Introduction

6.86 The development of the Sub Regional Transport Model by Systra has been commissioned by Solent Transport to forecast and evaluate the impact of development and transport investment across South Hampshire on a consistent basis. The use of the model is supported by all the highway authorities, including Hampshire County Council, Southampton City Council and Highways England. The model has been constructed according to the Department for Transport's WebTAG recommendations. (In critical areas the model exceeds these recommendations and in all other areas it performs well against them). A summary of the model's methodology is included in the Local Plan's Transport Assessment.

6.89 The Transport Assessment (TA) is divided into two parts:

- TA Part 1 – Comparative Assessment of Local Plan development scenarios based on different SGO options;

- TA Part 2 – Assessment of the preferred Local Plan based on SGO B/C, focussing in more detail on the effects on individual junctions.

6.90 The model's base date is 2015. The model then produces results for a "2036 baseline" and for "2036 development scenarios". The following is a summary of the scenarios and results, with more detail set out in the TAs.

6.91 The 2036 baseline includes the effects of development already permitted in the Borough, all development elsewhere in South Hampshire and background traffic growth. It also includes those transport interventions which the highway authorities have agreed are already committed. These include local junction improvements which are already funded from existing planning permissions; and strategic interventions which are not anticipated to be funded by the new Eastleigh Local Plan development (for example, the Whiteley link east of the Borough and the Government's motorway improvement programme). In other words the 2036 baseline sets out what will happen anyway even without the new Eastleigh Local Plan development.

6.92 The 2036 development scenarios all include the full Local Plan development (2016[26] – 2036) (i.e. not only planning permissions, but infill/windfall development and new development allocations).

6.93 The location of the infill/windfall development and smaller green field site allocations is the same in each scenario. However, the location of the Strategic Growth Options (and any supplementary development) varies, reflecting the development scenarios set out in this paper. The precise scale of development (level of homes, employment, retail / leisure and schools) also reflects the scenarios set out in this paper. (SGO B/C was modelled with 5,400 homes rather than 5,300 homes to create an extra margin for flexibility).

6.94 Each scenario also includes a specific set of additional transport interventions considered relevant to that scenario. In general, some of these interventions are directly related to the new development, while others may in part help to support the new development. These interventions were discussed with the highway authorities and Winchester City Council and it is understood that there is agreement that these represent reasonable assumptions to put into the model, in-order to generate outputs to be discussed further as needed. (Transport interventions were also discussed with the South Downs National Park Authority. These relate to qualitative measures which are generally less relevant to a strategic transport model. However the Local Plan SGO policy references them [e.g. sympathetic signage, enhanced crossings, traffic calming]).

6.95 Some of the additional transport interventions apply to all scenarios. These are the strategic Botley by-pass scheme (which also connects to the Whiteley link) and the Botley Road / Eastleigh Road junction improvements at Fair Oak. Each scenario also includes a new bus service from its SGO (each with a 30 minute frequency). SGO B/C also includes the extension of an existing bus service.

6.96 Most scenarios also include a range of other additional local junction improvements around the Borough. However for SGO B/C these are usually only included for the 'Do More' (DS3) scenario and not the 'Do Something' (DS2) scenario (see below).

[26] The transport model's base date is actually 2015 and so completions from 2015/16 are also included.

6.97 The other interventions vary according to the geographical location of the SGO.

6.98 For SGO B/C two scenarios (DS2 and DS3) are used, both with the provision of the new strategic link road. The additional interventions include junction improvements along the route of the link road. These include an initial assumption for an improvement to M3 junction 12. The additional interventions are based on two scenarios: 'Do Something' (DS2) and 'Do More' (DS3). The Do More scenario includes a higher level of intervention (generally additional improvements at the same junctions). For SGO B/C another theoretical scenario (DS1) is used, without the link road. The Council does not support this scenario, but by highlighting the difference with DS2 and DS3 it enables the degree of benefit of the link road to be established.

6.99 The other scenarios are for SGO C (DS4) without the link road; SGO D with the supplementary development at either Fair Oak or to the south of D (DS5 and 7 respectively); and SGO E (DS6).

6.100 SGO D includes a new local link road from the site to Bishopstoke Road. Otherwise these SGOs do not include strategic highway interventions. It is considered that SGOs D and E do not have deliverable strategic interventions. The reasons for this are stated more fully below.

6.101 Therefore to counteract the lack of new strategic links, the transport interventions for these scenarios have sought to maximise the enhancements to the existing network. This means that the scenarios for SGOs D or E (and for SGO B/C and C without the link road) all include a strategic corridor enhancement along Bishopstoke Road into Eastleigh[27] (which is subject to separate feasibility work). This intervention has not been included in the scenarios for SGO B/C with the link road (DS2 -3). It only applies to scenarios DS1, and DS4 – 7.

6.102 SGO E and one of the SGO D scenarios (DS7) also include a new roundabout and road closure relevant to that scenario[28].

6.103 SGO B/C includes a 'Do Something' and 'Do More' scenario because it introduces a major new link road and it is important to understand the level of additional junction enhancements required to make this work. Nevertheless, it is considered that the SGO B/C 'Do More' scenario includes fewer improvements to the existing road network than the SGO C, D or E 'Do Something' scenarios, primarily because it does not include the Bishopstoke Road corridor improvements.

6.104 In short the balance of different transport intervention assumptions used across scenarios is considered appropriate. New strategic transport improvements are only included where there is considered to be a reasonable

[27] Eastleigh town centre Station Hill / Romsey Road roundabout improvements; and Bishopstoke Road / Chickenhall Lane signalised

[28] Quobb Lane / Allington Lane changed to roundabout; Quob Lane road closure immediately south of Barbe Baker Avenue / Quob Farm Close

prospect that they can be delivered. However for other scenarios an additional corridor improvement is added to create a fair assessment.

Deliverability of Strategic Transport Interventions

6.105 The deliverability of the transport improvements associated with the Council's preferred SGO is set out in the second section of this paper and the Infrastructure Delivery Plan.

6.106 SGOs D or E are considered unlikely to be able to deliver strategic transport improvements for the following reasons.

6.107 A new strategic link road from SGO D or E towards the key Southampton / Eastleigh destinations and the M27 junction 5 motorway junction would need to directly cross the River Itchen environmental designations (the international special area of conservation and national site of special scientific interest). In addition it would need to connect to the as yet unbuilt full Chickenhall Lane Link Road. The Council wishes to see this road built. However it is estimated to cost £120 million and is likely to require very significant public sector funding which is not currently committed. These factors mean it is unlikely SGOs D or E could deliver a new strategic link road.

6.108 The Council has not received any studies on the feasibility of SGO E providing a new junction on the M27 (i.e. a junction 6); and therefore has no indication that such a junction would be technically feasible, desirable (in terms of the 'knock on effect' on the local highway network), fundable or provide good value for money. Highways England advice[29] explains that generally the minimal permissible distance between motorway junctions is 2 kilometres. This relates to the distance between slip roads joining or leaving the motorway, not the junction's mid-point. This is to provide sufficient weaving distance, required to avoid conflicts between merging and diverging traffic and so maintain a safe motorway. It is considered unlikely these distances can be achieved whilst inserting a new junction between junctions 5 and 7. Furthermore the M27 is already used by a significant proportion of local traffic for which motorways are not designed[30]. The transport modelling indicates that even with the smart motorways scheme and before adding in an SGO the M27 between junctions 5 and 7 will be approaching or exceeding capacity at peaks[31], which suggests there could be insufficient capacity on the M27 for a new junction to serve local traffic. The cost of a junction cannot be known in the absence of a feasibility study, although two recent local examples range from £28 million to £42 million[32].

6.109 In December 2016, Highways England confirmed that: "We have no plans to pursue a Junction 6 on the M27 as we do not believe one can be delivered within the requirements of Design Manual for Roads and Bridges. Any J6

[29] Interim Advice Note 149/11, Existing Motorway Minimum Requirements

[30] 30% of M27 traffic only travels for 1 or 2 junctions

[31] At the 2036 baseline in the AM and PM peaks the links all exceed 80% vehicle to capacity ratio and one link exceeds 100% vehicle to capacity ratio

[32] M275 Tipner = £28.1 million (new junction, park and ride, bus lanes); M27 junction 10 upgrades = "in the order of £42 million"

would potentially undermine the purpose of a SRN [Strategic Road Network] route as it would encourage more junction hopping which is already a known issue in this area. It would need to be demonstrated how a potential J6 could be delivered before being included as critical mitigation for growth proposals[33]".

6.110 In December 2017, Highways England reconfirmed that the above position had not changed and added that: "…if Eastleigh's Local Plan was reliant on a J6 to facilitate growth set out in allocations, the deliverability of a J6 would need to be established (by Eastleigh) before the Local Plan/allocations could be considered sound. We believe J6 on the M27 would be difficult to achieve and it is not something to date we plan to consider or look at in any detail. This is not to say that if Eastleigh (or other) wished to pursue a J6 and presented evidence it was achievable (inc. funding, safety, economics etc.) we would not consider its acceptability (note on a Motorway there is a general presumption against new accesses), although this would be a significant level of work (and cost) for Eastleigh which in the end would very likely establish a J6 is not viable (more than a mere approach)…"[34]

6.111 It is considered SGO D or E are unlikely to support a new rail station, for the reasons set out in the public transport section above.

Interpretation of Results

6.112 The total results relate to the effects of all trips: existing trips and all increases in trips (resulting from permitted development in Eastleigh, new Local Plan development in Eastleigh, all development in South Hampshire and elsewhere and background traffic growth). The new Local Plan development is therefore a relatively small component of these overall trips, and therefore variations in Local Plan development scenarios usually only produce relatively small differences in the total results.

6.113 The transport model results below also present the effect of the increase in trips from the 2036 baseline. This increase relates solely to the effects of the new Local Plan development (and the new transport interventions). (On individual roads this includes consequent re-routeings caused by any extra congestion or new highway infrastructure). This therefore focuses on the variations between the different Local Plan development scenarios. The new Local Plan development includes smaller greenfield allocations and urban infill/windfall development as well as the SGOs, and the only variable between the development scenarios is the location of the SGO. Therefore the differences between the SGOs alone will be greater than indicated from the new Local Plan development as a whole.

6.114 Where results are for the peak period, this is for 07.00 – 10.00 and 16.00 – 19.00. Where results are for the peak hour, this is for the busiest hour within these periods (see TA Part 1 para. 2.2.3).

[33] Letter to Eastleigh Borough Council dated 14 December 2016
[34] Email to Eastleigh Borough Council dated 11 December 2017

Transport Assessment: Traffic Delays across South Hampshire

6.115 The 2036 baseline predicts what will happen in any case even without the new Eastleigh Local Plan development. For example there were 85,688 hours of delay at junctions across South Hampshire in 2015, and the model predicts 140,632 hours of delay at the 2036 baseline. In other words there is predicted to be a 64% increase in delays without the new Local Plan development. (Within the Borough, the increase is 51%). It should be noted that this is not an inevitable increase, if additional as yet unplanned improvements are made to public transport or the highway network, these figures should decrease.

6.116 It is important to recognise this context. However the key issue for the Local Plan is which development scenario will result in the least additional delays over and above the 2036 baseline. Table 24 shows both the total level of delays at 2036 with the full Local Plan development, and the increase in delays from the 2036 baseline (to identifying the specific effect of the new Local Plan development). The results are for the overall delays across most of the mainland South Hampshire area, including all the areas around Eastleigh Borough. The Borough covers a small area and none of the SGOs are too far from the Borough boundary. It is therefore important to consider the effects over this wider area.

Table 24: Total Junction Delays: South Hampshire

(Adjusted Model Area)

Ref	Local Plan based on SGO:	1. Total Delays 2036		2. Increase in Total delays from 2036 Baseline	
		Peak Hours	Whole Period	Peak Hours	Whole Period
2015	N/A			N/A	N/A
2036 Baseline	N/A.	28,893	111,849	N/A	N/A
DS1	B/C (without link road)	29,548	114,442	655	2,594
DS2	B/C (with link road and do something)	29,659	114,308	767	2,459
DS3	B/C (with link road and do more)	29,208	112,798	315	950
DS4	C plus (without link road)	29,280	113,429	388	1,580
DS5	D (sup. dev. in Fair Oak)	29,238	113,122	345	1,273

Ref	Local Plan based on SGO:	1. Total Delays 2036		2. Increase in Total delays from 2036 Baseline	
DS6	E (sup. dev. in Fair Oak)	29,308	113,444	416	1,595
DS7	D (sup. dev to south)	29,242	113,107	349	1,258

Extract from TA Part 1, Tables 18 and 19. Based on trips of all vehicle classes; South Hampshire core and marginal model area excluding Portsmouth and the Isle of Wight; PCU Hours (Passenger car unit equivalents); Combined AM and PM Representative Peak Hour; Whole Period 7am – 7pm.

6.117 The full results for the whole South Hampshire model area are set out in the TA Part 1 Tables 18 and 19. These indicate that the increase in delays caused by the new Local Plan development is 12.8 to 15 times greater for SGOs D or E than it is for SGO B/C (DS3). However further analysis of these results indicates that a significant added benefit occurs for SGO B/C (DS3) due to a significant reduction in delays in Portsmouth. It is considered that differences in development and transport improvements in Eastleigh Borough would be unlikely to generate such a difference in Portsmouth some 20 miles away. Systra suggest this relates to background 'noise' in the transport model rather than a genuine difference caused by the Local Plan development scenarios.

6.118 For this reason the results in Table 24 above relate to the adjusted model area results, which are for the mainland South Hampshire area excluding Portsmouth (and also excluding the Isle of Wight). It is considered this is more likely to provide robust results.

6.119 Column 1 sets out the overall total delays for the peak hours and the 12 hour period. It illustrates that the differences in total delays caused by the new Local Plan development and by variations between the development scenarios is small. (For example, from the 2036 baseline the increase in total delays in the 12 hour period is 0.9% for a Local Plan based on SGO B/C (DS3) and 1.1% to 1.4% for SGOs D or E (DS5 – DS7). This is because total delays arise from a wide variety of sources across the whole of South Hampshire and the effect of the new Eastleigh Local Plan development is inevitably a small part of that.

6.120 Column 2 sets out the increase in total delays caused solely by the new Local Plan development, and so focuses on the effects of the different development scenarios.

6.121 It illustrates that for the whole day period, a Local Plan based on SGO B/C with the link road and the 'do more' transport improvements (DS3) generates the least increase in delays, at 950 hours. SGO D generates at least 1,258 hours of delay (DS7), 32% higher than for SGO B/C (DS3). SGO E (DS6) generates 1,595 hours of delay, 68% higher than for SGO B/C (DS3).

6.122 For the peak periods, a Local Plan based on SGO B/C with the link road and 'do more' improvements (DS3) also generates the least increase in delays. The difference in the increases is less than for the whole period, SGO D (DS5) generating an increase which is 9.5% higher, and SGO E (DS6) 32% higher.

6.123 It should also be noted that if option B/C were developed without the link road (DS1) (a theoretical scenario which the Council does not support), or with the link road and some additional improvements along the link road and fewer improvements elsewhere in the Borough (DS2), this would generate a significantly greater increase in delays than in any of the other scenarios. Therefore SGO B/C becomes effective at reducing delays with the combined effects of the link road and 'do more' junction improvements.

6.124 SGO C (without the link road) generates an increase in delays which is greater than for SGO D and about the same as for SGO E.

6.125 All the development scenarios meet the Local Plan target to 2036. However in considering these results, it should be noted that some of the development scenarios include a greater increase in development, particularly in dwellings, to start to meet longer term needs as well. This means that a Local Plan including SGO B/C (DS3) generates the most overall trips. For example across the whole period, SGOs D and E generate 17% to 20% fewer trips than SGO B/C (DS3).

Table 25: Increase in Development in and Trips to / from Eastleigh Borough

	Increase in Development From 2036 Baseline				Increase in trips from 2036 baseline	
	Dwellings	Employment (Sq M)	Retail (Sq M)	Leisure (Sq M)	Peak Period	Whole Period
DS1 – 2	8,533	138,000	11,779	400	28,845	57,731
DS3	8,533	138,000	11,779	400	29,086	58,048
DS4	7,331	133,417	10,779	400	24,875	48,579
DS5	6,477	138,000	10,579	400	23,221	46,479
DS6	6,477	138,000	6,996	400	24,532	46,357
DS7	6,477	138,000	10,079	400	24,418	47,961

TA Part 1 tables 7 and 12. Trips are all trips: highway, public transport, active. Trips are those with an origin or destination in Eastleigh Borough. Peak period 07.00 – 10.00 and 16.00 – 19.00. Whole period 07.00 – 19.00.

6.126 In other words, SGOs D or E are generating increases in delays which are 32% to 68% higher than for SGO B/C (DS3), despite delivering less development and so catering for 17% to 20% fewer trips in the first place. Therefore a Local Plan based on SGO B/C and a strategic new link road is also starting to address longer term development needs whilst minimising delays.

6.127 In summary the transport model predicts that a Local Plan including SGO B/C (DS3) can introduce a major increase in development with the least increase in traffic delays, whereas a Local Plan based on SGOs C, D or E would result in a greater increase in delays. This is because SGO B/C will provide additional strategic transport improvements: the link road combined with 'do more' junction improvements.

Transport Assessment: Traffic Delays In Different Areas

6.128 The following tables set out the increase in delays caused by the new Local Plan development (for the whole day period) in different parts of the Eastleigh, Winchester and Southampton Council areas.

Table 26: Total Junction Delays (Eastleigh Borough)

Ref	Local Plan based on SGO:	Increase in Total delays from 2036 Baseline Whole Period					
		Eastleigh Borough	Bishopstoke / Fair Oak / Horton Heath	Botley / Hedge End / West End	Bursledon / Hamble / Hound	Chandler's Ford / Hiltingbury	Eastleigh town
2036 Baseline	(Total Delays):	(18,613)	(558)	(6,497)	(3,547)	(1,031)	(6,980)
DS1	B/C (without link road)	2,494	471	597	113	46	1,266
DS2	B/C (with link road and do something)	2,069	525	460	67	224	794
DS3	B/C (with link road and do more)	1,335	577	157	46	192	363
DS4	C (without link road)	1,815	262	431	84	34	1,004
DS5	D (sup. dev. in Fair Oak)	1,426	29	420	84	-1	894
DS6	E (sup. dev. in Fair	1,521	-17	653	88	-1	797

Ref	Local Plan based on SGO:	Increase in Total delays from 2036 Baseline Whole Period					
	Oak)						
DS7	D (sup. dev to south)	1,343	7	439	69	-5	834

Extract from TA Part 1, Table 19. Based on trips of all vehicle classes; PCU Hours (Passenger car unit equivalents); Whole Period 7am – 7pm.

6.129 SGO B/C (DS3) generates the least increase in delays across Eastleigh Borough. However the difference with SGO D [DS7] is marginal, and with the other SGO scenarios for C, D and E are significantly less than when considering the wider South Hampshire area. This means that a lot of the differences between SGOs B/C, D and E are being felt outside of the Borough.

6.130 Within the Borough, SGOs B/C or C (DS1 - 4) generate more delays in Bishopstoke / Fair Oak / Horton Heath. SGOs D or E (DS5 – 7) generate more delays in Botley / Hedge End / West End as do SGOs B/C or C without the link road, for example as traffic travels down Allington Lane into Southampton. SGO B/C with the link road (DS2 – 3) generates more delays in Chandler's Ford / Hiltingbury, where the link road provides a new route to. In other words, each SGO is generally generating more delays in its own local area, and in the areas where the key existing or new road links from that SGO to key destinations join the wider highway network.

6.131 In addition SGO B/C with the link road (DS3) results in a significantly lower increase in delays in Eastleigh town than any of the other scenarios, as the link road (with 'do more' interventions) is effective at diverting traffic away from the town.

6.132 The areas of the Borough with by far the most total delays to start with (i.e. at the 2036 baseline) are Eastleigh and Botley / Hedge End / West End, and the area with by far the least total delays is Bishopstoke / Fair Oak / Horton Heath. Therefore, relative to the other SGOs, SGO B/C is generating the least increase in delays in the most congested areas. In general terms these are also the areas with the poorest existing air quality at present. (2 of the 4 current Air Quality Management Areas in the Borough are the M3 corridor and Southampton Road / Leigh Road in or on the edge of Eastleigh town[35]). Nevertheless the Council is currently assessing the existing and future air quality impacts in more detail.

[35] The other current AQMAs are Botley High Street, although all scenarios incorporate the Botley by-pass; and Hamble Lane approaching Windhover roundabout at Bursledon

Table 27: Total Junction Delays (Winchester)

Ref	Local Plan based on SGO:	Increase in Total delays from 2036 Baseline Whole Period			
		Winchester district (within model area)	Colden Common, Oswlebury, Otterbourne, Twyford	Bishops Waltham, Upham	Winchester Rest
2036 Baseline	(Total Delays):	12,934	1,693	285	10,956
DS1	B/C (without link road)	285	46	61	178
DS2	B/C (with link road and do something)	855	38	74	744
DS3	B/C (with link road and do more)	196	-67	65	198
DS4	C (without link road)	181	5	57	119
DS5	D (sup. dev. in Fair Oak)	239	48	13	177
DS6	E (sup. dev. in Fair Oak)	226	5	21	200
DS7	D (sup. dev to south)	160	29	13	118

Extract from TA Part 1, Table 19. Based on trips of all vehicle classes; PCU Hours (Passenger car unit equivalents); Whole Period 7am – 7pm.

6.133 Winchester covers a wide area. Focussing on those areas closest to the SGOs, SGO B/C with the link road and 'do more' interventions generates a reduction in traffic delays in the Colden Common / Oswlebury / Otterbourne / Twyford area, the area of Winchester immediately to the north of the SGO. In other words the new link road is completely counteracting the effects of delivering major new development close to this area, and introducing some additional benefits. (It should be noted that this benefit is only achieved with the 'do more' interventions). None of the other scenarios generate this benefit, and SGOs D (or B/C without the link road) add to delays in this area.

6.134 Interestingly SGO C (without the link road) (DS4) is only generating a marginal increase in delays in this area whereas SGO D (DS5 and 7) is generating more delays. On the face of it this is counter intuitive because SGO C contains more development and is closer to this area. However this may be because SGO C generates more delays in Fair Oak which limits the flows of extra traffic to the north. SGO E (DS6) also only generates a

marginal increase in delays, which is less surprising because it is furthest from this area.

6.135 SGOs B/C or C (DS1 – 4) generate a greater increase in delays in the Bishops Waltham / Upham area, which again is not surprising because they connect to the B-road network towards this area.

6.136 At the 2036 baseline (i.e. before the new Local Plan development), the Colden Common / Oswlebury / Otterbourne / Twyford areas experience far more delays than Bishops Waltham / Upham. Therefore SGO B/C (DS3) is doing the most to minimise delays in the most congested areas.

Table 28: Total Junction Delays (Southampton)

Ref	Local Plan based on SGO:	Increase in Total delays from 2036 Baseline Whole Period		
		Southampton City	Southampton – West of Itchen	Southampton – East of Itchen
2036 Baseline	(Total delays):	(28,697)	(23,905)	(4,792)
DS1	B/C (without link road)	282	-68	350
DS2	B/C (with link road and do something)	-26	-90	64
DS3	B/C (with link road and do more)	-105	-274	169
DS4	C plus (without link road)	122	-41	163
DS5	D (sup. dev. in Fair Oak)	121	-123	245
DS6	E (sup. dev. in Fair Oak)	313	29	284
DS7	D (sup. dev to south)	120	-92	212

Extract from TA Part 1, Table 19. Based on trips of all vehicle classes; PCU Hours (Passenger car unit equivalents); Whole Period 7am – 7pm.

6.137 SGO B/C with the link road (DS2 and particularly DS3) generates a reduction in delays in Southampton, whereas the other SGO options generate an increase in delays. At the starting point (i.e. the 2036 baseline), Southampton experiences significantly more delays than Eastleigh or Winchester. It also includes a range of air quality management areas. Therefore SGO B/C is having least effect on the most congested area.

Transport Assessment: Traffic Delays in Road Corridors

6.138 The TA Part 1 Tables 24 – 27 set out the cumulative delays along key road corridors: the new link road, Bishopstoke Road (westbound) and Allington Lane (southbound). The key results are described below, focussing on the AM Peak Hour period, as this is when most delays are generally predicted.

6.139 The analysis for the 'new' link road is actually based on the stretch from Highbridge to the M3 junction 12 which primarily follows existing routes. For SGO B/C (DS3) the total delay along this stretch of the link road (westbound) in the AM peak is 151 seconds (which will include any delays which are occurring on existing routes).

6.140 Relative to the 2036 baseline, SGO B/C with the link road (DS3) generates virtually no (just a 3 second) increase in delays along Bishopstoke Road heading west into Eastleigh town. (This is the extra increase in delays as at 2036 solely as a result of the new Local Plan development. It does not reflect any other increases in delays from 2015 for other reasons). SGO B/C without the link road (DS1) generates a 275 second delay, despite this scenario including corridor enhancements along this road. This demonstrates that the link road is effective at facilitating major development without adding to delays along Bishopstoke Road. For SGO B/C with the link road (DS3) the combined extra delays on the link road and Bishopstoke Road (151 + 3 = 154 seconds) are still less than those generated on Bishopstoke Road by SGO B/C without the link road (275 seconds).

6.141 The delays generated along Bishopstoke Road are 157 seconds for SGO C; 160 – 173 seconds for SGO D (DS5 and DS7) and 142 seconds for SGO E. SGO B/C with the link road (DS3) only generates 3 seconds delay along Bishopstoke Road, which is therefore significantly less than for the other options, despite these other options including corridor enhancements along this road. Nevertheless once the delays along the link road are factored in to SGO B/C (154 seconds combined) these start to balance out. However SGO B/C may still have a slight advantage because this section of the link road is an existing road. Its delays may include some existing delays and the other scenarios might create additional delays there as well.

6.142 On Allington Lane heading south towards Southampton, SGO B/C with the link road (DS3) generates a 2 second reduction in delays whereas SGOs C, D or E generate an increase in delays of 55 to 61 seconds.

Transport Assessment: Traffic Flows in South Downs National Park

6.143 The Council has a statutory duty to have regard to the purpose of national parks. Therefore the change in overall traffic levels within the national park is relevant to consider, as this will affect the amenity of the communities affected.

6.144 The TA Part 1, Figures 37 to 50 set out the changes in traffic flows caused by the new Local Plan development. Table 29 below summarises the changes on a variety of rural roads within the Park for the morning peak hour.

Table 29: Changes in Traffic Flows on Rural Roads within South Downs National Park: AM Peak Hour

		Oswelbury	Oswelbury to A272	Morestead Road east of Morestead	Morestead Road east of Oswelbury	Morestead Road north of Bishops Waltham	Average
DS1	B/C (without link road)	+153	+139	+81	-34	+57	79.2
DS2	B/C (with link road and do something)	+34	-12	+4	-37	-63	-14.8
DS3	B/C (with link road and do more)	+82	-6	+37	-43	-67	+0.6
DS4	C plus (without link road)	+98	+109	+33	+45	+42	+65.4
DS5	D (sup. dev. in Fair Oak)	+10	+78	-10	+57	+59	+38.8
DS6	E (sup. dev. in Fair Oak)	+17	+79	+1	+63	+64	+44.8
DS7	D (sup. dev to south)	+2	+74	-75	+57	+58	+23.2

TA Part 1: Figures 37 to 50. Difference in two way traffic flows between 2036 baseline and 2036 development scenario. PCU (Passenger Car Units) per hour. AM Peak Hour.

6.145 The level of traffic within the Park is likely to reflect the proximity of the SGO to the Park, the effect of the strategic link road (SGO B/C scenario), and the Botley by-pass (in all scenarios). The Table illustrates that on average SGOs B/C with the link road generates the lowest levels of extra traffic on rural roads within the Park in the AM peak. On average SGO B/C (DS3) generates virtually no increase. It is considered the link road is effective at helping to divert new traffic from the development and existing traffic away from 'short cuts' through the Park. This is an average and reflects individual roads where SGO B/C (DS3) generates either an increase or a decrease in traffic. The largest increase for SGO B/C (DS3) is at Oswelbury, with an increase of 82

cars per hour in the AM peak, which at this location is also a significantly larger increase than for options D or E. This is primarily caused by an increase in cars heading south west towards the SGO and new link road. Therefore this increase is likely to primarily reflect other traffic being attracted towards the link road (or possibly towards the new employment within the SGO), rather than from extra traffic originating from the SGO. It is important to stress that these are the effects prior to any traffic calming measures. Such measures may reduce these flows.

6.146 Table 30 below summarises the changes on a variety of B-roads within or on the edge of the Park for the morning peak period.

Table 30: Changes in Traffic Flows on B-roads within or on the edge of the South Downs National Park: AM Peak Hour

		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)	+138	-12	-150	-8
DS2	B/C (with link road and do something)	+389	+51	-140	+100
DS3	B/C (with link road and do more)	+388	+98	-83	+134.3
DS4	C plus (without link road)	+155	-22	-124	+3
DS5	D (sup. dev. in Fair Oak)	-34	-26	-62	-40.7
DS6	E (sup. dev. in Fair Oak)	-14	-16	-54	-28
DS7	D (sup. dev to south)	-36	-4	-37	-25.7

TA Part 1: Figures 37 to 50. Difference in two way traffic flows between 2036 baseline and 2036 development scenario. PCU (Passenger Car Units) per hour. AM Peak hour.

6.147 Table 30 illustrates that on average SGO B/C with the link road (DS2 and DS3) generate more traffic on the B-roads on the edge of the Park. These are busier roads than the rural roads. Therefore the percentage increase generated by SGO B/C on the B-roads is likely to be less than the percentage increase generated by the other SGOs on the quieter rural roads. Furthermore SGO B/C with the link road reduces the level of traffic on the one B-road which runs through the largest community within the Park at Twyford, as do the other scenarios.

6.148 SGO B/C generates more traffic on the B roads with the link road (DS2 and DS3) than without (DS1). Therefore it is the link road which is likely to be attracting traffic along these roads rather than the development generating it.

6.149 The other SGO scenarios (e.g. D or E) all result on average in a small reduction in traffic across the B-roads, which is likely to reflect the benefits of the Botley by-pass.

Transport Assessment: Traffic Delays Associated with SGO B/C and Link Road (DS2 and DS3) in More Detail

6.150 The Transport Assessment (TA) Part 2 considers the impacts associated with SGO B/C and the link road in more detail, focussing in on specific junctions and improvements based on the Do Something and Do More Scenarios. The specific interventions included in these scenarios are set out in the Delivery section of this paper. The following is simply a brief summary of the outcomes, and the TA should be referred to as well.

6.151 The TA Part 2 has considered the level of delays within the Borough, immediately outside the Borough (within Test Valley, Winchester and the South Downs National Park Authority), and on motorway junction slipways.

6.152 The transport model has assessed all the junctions in the Borough.

6.153 The TA Part 2 identifies a range of junction 'hotspots' in figures 13 - 15. These are junctions where the vehicle to capacity (V/C) ratio will exceed 80% in the peak hour. (The V/C ratio reflects the number of vehicles relative to the design capacity of the junction. An 80% ratio indicates that a road is approaching its capacity and is likely to be experiencing delays). The figures identify that across the Borough there will be 67 hotspots in the 2036 Baseline, rising to 70 hotspots each in the Do Something and Do More scenarios (TA Part 2 Table 6). In other words, this suggests that the overall level of congestion will not change significantly as a result of the new Local Plan development (with new link road).

6.154 The hotspots are predominately at junctions in or around the urban areas of Eastleigh, Chandlers Ford, Hedge End, Bursledon or the M27 / M3 motorways. In Fair Oak there are 2 hotspots in the 2036 Baseline and Do Something scenarios, and 3 in the 2036 Do More scenario. 1 of the hotspots in the Do Something scenario is more severe than those in the Do More scenario, which suggests that the Do More interventions are distributing delays more evenly.

6.155 The TA has identified that outside the Borough, comparing the 2036 baseline with the 2036 do more scenario, there is no change in hotspots in the AM peak (13) and a slight increase in the PM peak (10 to 12). (TA Part 2, para.7.2.3).

6.156 The TA then draws from these hotspots to identify "significant" and "severe" delays in the Do Something and Do More scenarios as set out in Table 31.

Table 31: Definition of Delays

Delay	Overall Position at 2036 Development Scenario	Increase from 2036 Baseline to 2036 Development Scenario
Significant	V/C is 85% or more	V/C has increased by 5% or more
Severe	V/C is 95% or more	V/C has increased by 10% or more
Or		
Severe	Average delay per vehicle is 2 minutes or more	Increase in average delay per vehicle is 1 minute or more

All delays are based on the peak hour period

6.157 This definition means that significant or severe delays represent locations where an issue develops at least in part due to increases caused by new Local Plan development. If the Local Plan generates a significant increase in traffic at a junction but with little or no delay; or if there are delays at the junction but the Local Plan adds little to them, this is not classed as a significant or severe delay.

6.158 These are the delays which are occurring after the link road and additional transport improvements have been made. Nevertheless, once again these delays are not inevitable if further public transport or highway improvements are made, or other changes are promoted (e.g. home / flexible working).

6.159 Of all the junctions in the Borough, 70 of which are potential hotspots in each scenario, the number predicted to experience significant or severe delay as a result of the new Local Plan development are set out in Table 32.

Table 32: Number of Junctions in the Borough with Significant or Severe Delays in Peak Hours

Development Scenario		Number of Junctions		
		Significant Delays	Severe Delays	Total
DS2	B/C (with link road and do something)	12	10	22
DS3	B/C (with link road and do more)	17	8	25

TA Part 2 Table 7

6.160 Therefore in the Do More scenario, of all the junctions in the Borough, 8 will experience severe delays and 25 will experience significant or severe delays, as a result of the new Local Plan development.

6.161 Compared to the Do Something scenario, the Do More scenario reduces the junctions with severe delays by 2 and increases the number of junctions with significant delays by 5. This means that by tackling some of the more severe delays, the Do More scenario is 'freeing up' traffic to cause some additional lesser but significant delays at other junctions. It is worth remembering that across South Hampshire the overall increase in delays in the Do More scenario is 36% less than in the Do Something scenario (see Table 26, 1,335 hours compared to 2,069 hours).

6.162 Outside of the Borough the Do Something scenario leads to junctions with 1 significant and 2 severe delays, and the Do More scenario reduces this to 2 significant and 1 severe delay. (TA Part 2 Table 76).

6.163 The TA Part 2 Table 7 sets out a summary of where significant and severe delays occur in the Do Something and Do More scenarios in the peak periods. The subsequent tables describe these delays in some detail. Table 33 below reproduces the key elements of the severe delays in the Do More scenario. Table 33 sets out the total number of results for each junction ("no. junction arm results") for each peak period. (There are therefore 2 results for each junction arm). The next column sets out the number of these results predicted to have a severe impact from the new Local Plan development. The last two columns represent the average queue length and delay for those arms with a severe impact. For example, Dodwell Lane has 3 arms leading to 6 arm results (one for each peak). Of these results 6 results, 2 register a severe impact, leading to a total queue / delay on one arm result of 12 cars / 101 seconds, and the other arm result of 8 cars / 61 seconds.

Table 33: Individual Junctions with Severe Delays in Peak Hours

TA Table	Junction	Location	Total No. Junction Arm results*	Junction Arm Results with Severe Impact	Total Queue length	Total Delay
			Total	Severe	Cars	Seconds per Car
Within the Borough						
8-9	Dodwell Lane	Hedge End / Bursledon	6	2	12	101
					8	61
32-33	Winchester Rd / Mortimers Lane	Fair Oak	6	1	5	54
36-37	M3 Jnc 12 / Allbrook Way	Allbrook	8	1	12	62

TA Table	Junction	Location	Total No. Junction Arm results*	Junction Arm Results with Severe Impact	Total Queue length	Total Delay
			Total	Severe	Cars	Seconds per Car
38-39	Winchester Rd / Otterbourne Hill	Allbrook	6	4	3	12
					17	133
					8	27
					14	106
48-49	M3 Jnc 12 northern roundabout	Allbrook	4	1	29	110
56-57	A334 / B3051 / Botley bypass	Hedge End	8	1	5	20
66-67	Winchester Rd / Shamblehurst Lane	Hedge End	6	1	1	41
74-75	Woodhouse Lane / Botley bypass	Hedge End	6	2	3	15
					5	19
Outside the Borough						
79-80	B2177 Winchester Road / B3035 Corhampton Road	Bishops Waltham	6	1	2	14

Car = Passenger Car Unit

*Double actual number, 1 result for AM peak hour, 1 result for PM peak hour

6.164 The TA Part 1 after para. 7.2.16 sets out the increase in delays along road corridors in Winchester around the SGO in the peak hour. Of 16 results only 4 lead to an increase in delay of more than 30 seconds from the 2036 Baseline to Do More scenarios, and these delays generally make up a modest proportion of the overall journey time along that corridor. 5 results actually show a slight decrease in delays. Overall these effects are considered to be modest given the scale of development occurring.

6.165 A number of points can be drawn from Table 33 and the associated analysis.

6.166 First the new Local Plan development relates to substantial new growth of 8,533 dwellings, 138,000 sq m of employment and 12,179 sq m of retail / leisure uses. This consists of the Strategic Growth Option, other new greenfield allocations, and other urban development not yet with planning permission. The model does not identify which developments are causing which elements of delays, and clearly they all have a cumulative effect across the network. However it is considered reasonable to suggest that the junctions where a significant proportion of the severe delay is likely to be generated by the SGO are those related to the M3 junction 12 (combined with some urban development in Eastleigh / Chandler's Ford); and Fair Oak.

Nevertheless the SGO is likely to contribute to at least some of the delays elsewhere as well, for example in the Hedge End area, along with other developments in that area (for example there are other greenfield allocations for approximately 1,200 dwellings in this immediate area).

6.167 Second, where severe congestion does occur it typically only does so on 1 or 2 arms of the junction out of usually 6 to 8 arms. Severe congestion does not occur across the whole or most of the junction. (The only exception is Winchester Road / Otterbourne Hill which experiences severe congestion on 4 out of 6 arms).

6.168 Third, it is important to note the actual delays occurring in the "severe" scenario. This is the total delay, not just the delay caused by the new Local Plan development, so is the delay which will be experienced by individual drivers. The maximum delay at any individual junction as set out in Table 33 above and summarised below is just over 2 minutes (133 seconds), with queues of 12 cars at a time. Just over half of the delays are for 1 minute or less:

Delay		Number of Delays	Number of Cars (PCU) Queued
> 1.5 minutes	(> 90 seconds)	4	12 – 29
1 - 1.5 minutes	(60 -90 seconds)	2	8 – 12
0.5 - 1 minute	(30 – 60 seconds)	2	1 – 5
< 0.5 minutes	(< 30 seconds)	5	3 – 8 cars
		13	

6.169 The definition for "significant" and "severe" congestion used in the transport model has been devised in consultation with Hampshire County Council as the highway authority. These are considered to be sensible definitions to focus on the specific highway issues at individual junctions.

6.170 The NPPF also uses the term "severe" congestion, explaining that "Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe" (paragraph 32). The overarching approach of the NPPF is to promote sustainable development and wherever possible meet the need for development. In this context it is considered that paragraph 32 is explaining that Local Plan / Borough wide development should only be prevent where major and widespread cumulative traffic problems will be created.

6.171 The Local Plan is promoting major new development. The transport model indicates that, assuming the Do More scenario is applied, the Council's development scenario (SGO B/C with link road) generates fewer extra delays than any other scenario. It also indicates that, focussing specifically on the effects of the Local Plan development in the peak hours only:

- only 8 junctions are predicted to experience severe congestion;

- these severe delays usually only relate to one part of the junction with most parts of the junction not severely affected;

- less than half of these severe delays result in a total delay of one minute or more, and only 1 out of 13 results leads to a delay of more than two minutes (2 minutes 13 seconds).

6.172 To put it another way, out of all the junctions in the Borough, none of the other junctions experience any severe congestion as a result of the new Local Plan development, many arms on the remaining 8 junctions do not experience severe congestion, and where arms do experience severe congestion the actual delay at individual junctions are not too long.

6.173 None of the motorway junction slip roads within the Borough experience severe delays (see below regarding M3 junction 12).

6.174 In the context of the NPPF and the objective to meet development needs wherever possible, it is not considered that this amounts to severe congestion in NPPF terms.

6.175 The sub regional transport model does not provide a sufficient level of information to assess the effects at junction 12 of the M3, the point at which the new link road joins the motorway network. The Council is working with Hampshire County Council and Highways England to assess the level of congestion and potential measures to address this in more detail.

6.176 The above results indicate that the SGO B/C 'do more' (DS3) scenario is the most effective SGO B/C scenario for reducing delays, and so this is used as the standard SGO B/C scenario for the following commentary.

Transport Assessment: Reducing the Need to Travel by Car

6.177 The strategic transport model sets out, for each Local Plan scenario, the following indicators: the average distances travelled, total carbon dioxide emissions from those that travel, the ability of people to walk or cycle to local facilities, and their propensity to use public transport. These results are based on all trips which have an origin or destination in Eastleigh Borough.

6.178 The key results are set out below.

Table 34: Average Distance of Trips

Transport Model Ref	Local Plan based on SGO:	Average of All Trip Lengths (km)	Change in Average Trip Length from 2036 baseline (km)
2036 Baseline	N/A.	17.37	
DS1	B/C (without link road)	17.22	-0.15
DS2	B/C (with link road and do something)	17.20	-0.17
DS3	B/C (with link road and do more)	17.18	-0.19
DS4	C plus (without link road)	17.20	-0.17
DS5	D (sup. dev. in Fair Oak)	17.15	-0.23
DS6	E (sup. dev. in Fair Oak)	17.13	-0.24
DS7	D (sup. dev to south)	17.11	-0.26

Based on trips of all vehicle classes, any trip with an origin or destination in Eastleigh Borough, whole period (7am – 7pm).

6.179 Table 34 illustrates that the average distances travelled to and from the Borough under each development scenario are broadly similar. For example, a Local Plan with SGO B/C and the link road (DS3) generates average trip distances of 17.18km; and with SGO D or E (DS5-7) 17.11 – 17.15km. A Local Plan with SGO B/C is therefore generating average trip distances which on average are 30 – 70 metres longer.

6.180 One of the policy reasons to minimise the distance travelled is to reduce greenhouse gas emissions. Table 35 sets out carbon dioxide emissions within the model area from trips with an origin or destination within Eastleigh Borough..

Table 35: Carbon Dioxide Emissions

Transport Model Ref	Local Plan based on SGO:	Total Carbon Dioxide (million kg)	Change in Carbon Dioxide from 2036 Baseline (million kg)
2036 Baseline	N/A.	52.22	
DS1	B/C (without link road)	52.47	+0.25
DS2	B/C (with link road and do something)	52.46	+0.24
DS3	B/C (with link road and do more)	52.08	-0.14
DS4	C plus (without link road)	52.39	+0.17
DS5	D (sup. dev. in Fair Oak)	52.37	+0.15
DS6	E (sup. dev. in Fair Oak)	52.34	+0.12
DS7	D (sup. dev to south)	52.36	+0.14

Extract from TA Part 1 Table 21. Based on all trips of all vehicle classes, whole period (7am – 7pm), whole South Hampshire area

6.181 Table 35 illustrates that the total carbon dioxide emitted under each development scenario is broadly the same. For example, the total carbon dioxide emitted for a Local Plan with SGO B/C and the link road (DS3) is predicted to be 52.08 million kg; and with SGO D or E (DS5-7) 52.34 to 52.37 million kg. A Local Plan based on SGO B/C is therefore generating 0.5% to 0.55% less carbon dioxide. This is despite SGO B/C delivering more development. Compared to the 2036 baseline, SGO B/C actually helps to bring total carbon dioxide emissions down very slightly whereas SGOs D and E increase them very slightly. Whilst average trip distances are slightly higher with SGO B/C, the slightly lower level of carbon dioxide emitted is due to the lower levels of congestion with this SGO.

6.182 Table 36 sets out the propensity to undertake trips by walking or cycling.

Table 36: Walking and Cycling Trips

Transport Model Ref	Local Plan based on SGO:	% All Trips by Walking or Cycling	Percentage Point increase Walking or Cycling Trips from 2036 Baseline
2036 Baseline	N/A.	12.9%	
DS1	B/C (without link road)	13.5%	+0.7%
DS2	B/C (with link road and do something)	13.5%	+0.7%
DS3	B/C (with link road and do more)	13.5%	+0.6%
DS4	C (without link road)	13.5%	+0.7%
DS5	D (sup. dev. in Fair Oak)	13.4%	+0.5%
DS6	E (sup. dev. in Fair Oak)	13.3%	+0.5%
DS7	D (sup. dev to south)	13.3%	+0.4%

Extract from TA Part 1 Table 14. Based on trips of all vehicle classes, trips with an origin or destination in Eastleigh Borough, whole period (7am – 7pm).

6.183 Table 36 indicates that the propensity to walk or cycle is very similar across all the new Eastleigh Local Plan development scenarios. Nevertheless, SGO B/C (DS3) does generate a slightly greater increase in walking / cycling than SGOs D or E (DS5 – 7).

6.184 Focussing on just the effects of the Local Plan, the increase in the proportion of people walking or cycling is approximately 20% to 50% higher with SGO B/C. (For example +0.6% is 20% higher than +0.5%).

6.185 Table 37 sets out the transport model results for public transport patronage.

Table 37: Public Transport Trips

Transport Model Ref	Local Plan based on SGO:	% All Trips by Public Transport	Percentage Point Increase in Public Transport Trips from 2036 Baseline
2036 Baseline	N/A.	4.2%	
DS1	B/C (without link road)	4.4%	+0.2%
DS2	B/C (with link road and do something)	4.4%	+0.2%
DS3	B/C (with link road and do more)	4.4%	+0.2%
DS4	C (without link road)	4.3%	+0.1%
DS5	D (sup. dev. in Fair Oak)	4.9%	+0.6%
DS6	E (sup. dev. in Fair Oak)	4.3%	+0.1%
DS7	D (sup. dev to south)	4.9%	+0.7%

Extract from TA Part 1, Table 14. Based on trips of all vehicle classes, trips with an origin or destination in Eastleigh Borough, whole period (7am – 7pm), whole South Hampshire area

6.186 It is important to stress that the model assumes that each SGO will have a new 30 minute bus frequency to provide an equal assessment. In general terms, this is considered to be a more generous assumption with respect to SGO E because the preceding assessment indicates it is less likely to support a viable bus service in the first place. The model also includes existing public transport services (with more services closer to SGO B/C and C) and the extension of an existing service into SGO B/C and C. The model does not include a new rail station for SGO D or E for the reasons stated in the preceding section.

6.187 On this basis a Local Plan including SGO B/C, C or E generate similar total levels of public transport usage (4.3 to 4.4%). Focussing on the increases in patronage generated by the new Local Plan development, SGO B/C (DS3) generates a 0.2% increase, which is double the 0.1% increase generated by SGO C (DS4) or SGO E (DS6). However, SGO D (DS5 or 7) generates a higher total level of public transport patronage (4.9%). This is an increase of 0.6% to 0.7% which is at least 3 times that generated by SGO B/C. This may be because SGO D creates the shortest new bus route to a key destination (Eastleigh).

Transport and Accessibility: Sustainability Appraisal (SA) – June 2018

6.188 A number of sustainability appraisal indicators are relevant to this section. These have been updated to reflect the latest evidence, for example on the provision of new facilities and services.

Table 38: Sustainability Appraisal for Transport and Accessibility Issues

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
2.1	Community Facilities (community hall / library)	Slightly better	Access to community facilities may be more limited from D/E supplementary areas	
2.2/4.6	Health Facilities	Slightly better		
2.5/4.10/ 11.2	Cycle and footpath routes	Worse	Fewer links to the existing footpath and cycle network than SGO D	SGOs will create attractive new footpath / cycle routes
3.1a/4.1	Major rail station	Equal		
3.1b/4.2	Minor rail station	Equal		
3.1c/4.3	Frequent bus route (existing)	Better	(B/C better than E)	In addition more of B/C is closer to a frequent route than D
3.1d/4.4	Semi frequent bus route	Worse	(B/C worse than E)	B/C has better access to a frequent service so is better overall
3.1e/3.2/ 3.3/4.5a	Employment	Equal		Each SGO will provide new employment and not result in the loss of employment
3.4	Commercial uses in centres	Better	(E has smaller centre, D has supplementary areas with less provision / access)	
4.5b	Proximity to major	Worse	B/C is further from a major population centre	Transport modelling indicates very little difference in average

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
	population centre			distances travelled
4.7	Proximity to shopping facilities	Equal		B/C has larger centre than E
4.8	Primary school	Slightly better	Access to primary schools may be more limited from D/E supplementary sites	
4.9	Secondary school	Better	(Access more limited from south of D / E)	B/C is the only SGO which provides a new secondary school
4.11	Geographical barriers	Better	(B/C same as D with Fair Oak, but D with south separated by railway; E by motorway)	
6.2	Pollution	Equal		SA Appendix 6 acknowledges SGO B/C link road may improve air pollution in some places and worsen it in others. Transport modelling has since confirmed SGO B/C with link road will deliver less congestion overall. The Council is undertaking air quality assessments.

6.189 The SA indicates that SGO B/C scores better or equal for most issues. SAs are intended as relatively strategic assessments. Where the SA scores SGO B/C as worse (and in some cases where it scores equal or better), further detailed assessment by the Council suggests the negatives associated with SGO B/C are less than first indicated. Overall the Council considers the SA supports the Council's assessment regarding transport and accessibility.

7. Countryside gaps

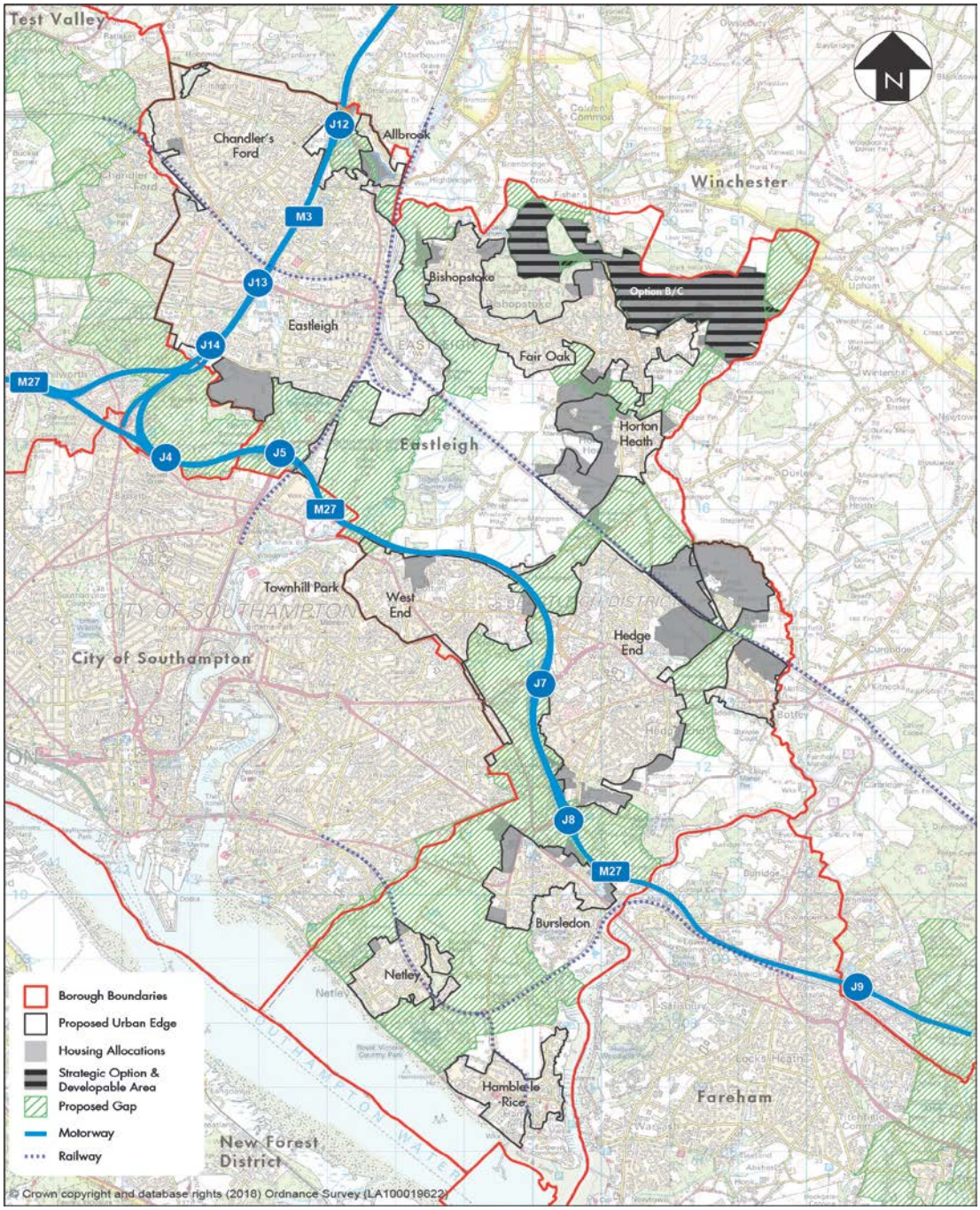
7.1 None of the SGOs are in the countryside gaps designated in the adopted Local Plan. In this sense alone they all score equally.

7.2 However the SGOs are of a scale that they could significantly alter the current pattern of town and countryside. It is therefore important to assess the potential of each SGO to retain robust countryside gaps within this new pattern of development.

7.3 The Countryside Gaps background paper considers the effect of the SGOs in more detail. This has been updated in parallel with the evolution of this SGO paper and the latest assessment is summarised and discussed in broad comparative terms as follows.

7.4 It is considered that options B/C and C will retain appropriate gaps with surrounding settlements proportionate to the scale of the settlements they are separating. These are illustrated by Map 5. The emerging masterplan will help to define the precise limits of built development for the SGO and is taking into account the need for gaps. However as an approximate guide at this stage the gap between SGO B and Colden Common is at least 0.75km wide, between SGO C and Lower Upham is approximately 0.75km wide, and Horton Heath approximately 1km. The gaps with Colden Common and Lower Upham would fall within both the Borough and neighbouring planning authorities. The Council understands that both Winchester and the South Downs National Park Authority would support this concept. The gap with Horton Heath would be wholly within the Borough. The background paper gives more details regarding the relationship between the urban areas and the rural landscape. This highlights some specific sensitivities (for example a part of the potential development land in B would be seen in an elevated view from the Colden Common gap, and there are smaller collections of buildings within the gap (scattered ‘urban fringe’ development) [i.e. Crowdhill and Fishers Pond]), which to some extent may be mitigated by careful use of density, layout and landscape.

Map 5: SGO B/C Countryside Gaps



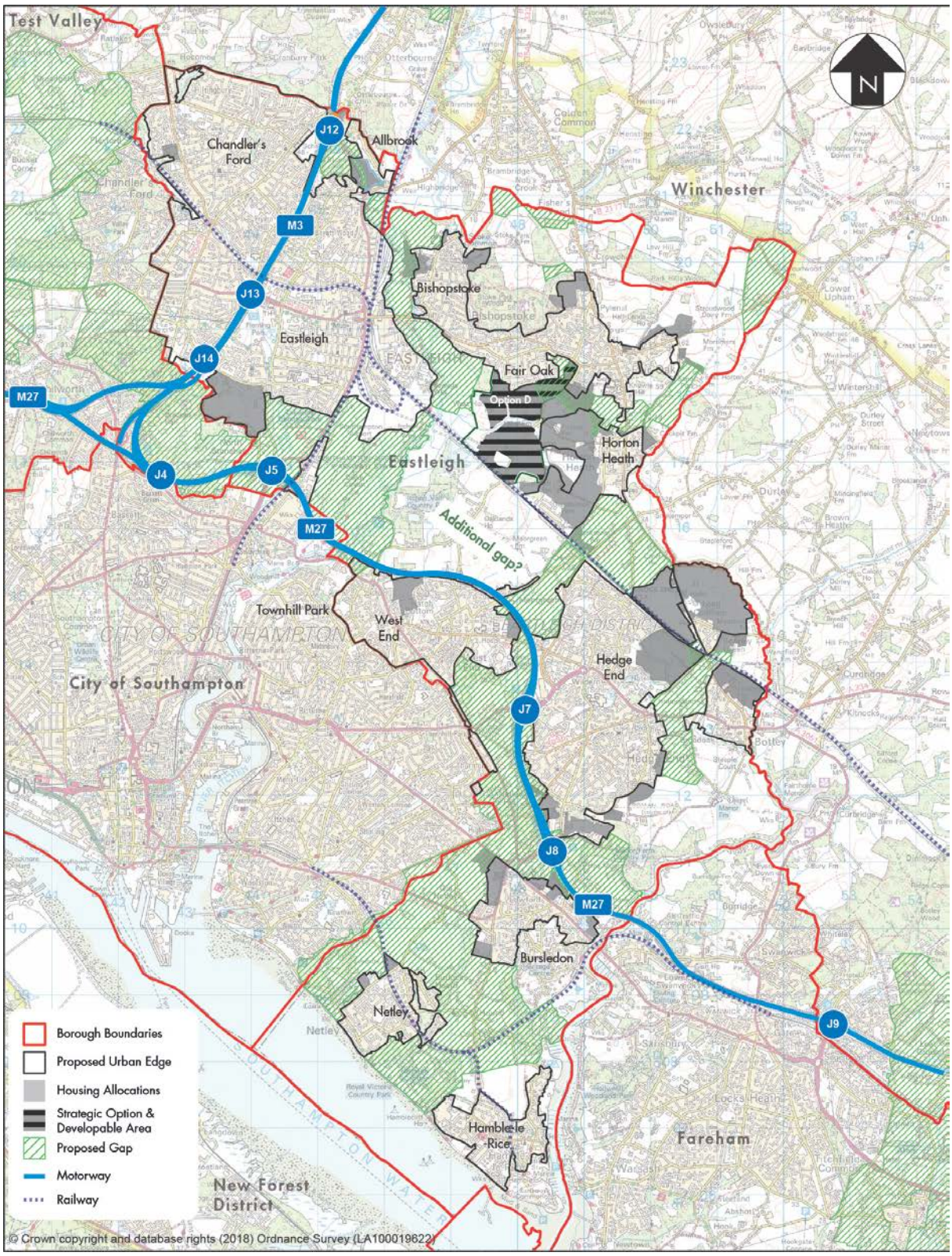
7.5 Options D and E lie between Southampton / West End and Bishopstoke / Fair Oak / Horton Heath. It is considered that a countryside gap should be retained between these settlements. The distance between the existing[36] urban areas is generally around 3 kilometres (narrowing to around 2 kilometres between West End and Horton Heath). It is considered that this whole area does not need to be designated a countryside gap, and that a gap would only be needed if significant development were allocated, so as to protect the remaining area of countryside. Given that such a gap would

[36] i.e. before taking account of the permitted West of Horton Heath / Chalcroft Farm development which will narrow this gap in places.

separate a major urban area (i.e. the city of Southampton and also West End) from a significant set of growing suburban communities (Bishopstoke / Fair Oak / Horton Heath), it is considered that a countryside gap within this area should have a significant width. This will ensure that people who have travelled through a major urban area (Southampton / West End) benefit from the perception of travelling through a reasonably significant area of countryside before reaching the next set of growing communities (Bishopstoke / Fair Oak / Horton Heath).

7.6 It is considered that if option D were developed, with the supplementary area to the north east of Fair Oak, the area to the south (the undeveloped option E area) would form a strong countryside gap because it would have clearly defined boundaries in the shape of the motorway and railway line. There is some scattered 'urban fringe' development in this area, for example along Allington Lane or Moorgreen Road. However this overall area, combined with the permitted development west of Horton Heath, would maintain a gap generally with a width of approximately 1.25 to 1.75 kilometres, creating a clear sense of separation between the growing Bishopstoke / Fair Oak / Horton Heath communities and the major Southampton / West End urban area to the south. The gap is illustrated in Map 6.

Map 6: SGO D Countryside Gaps (assumes supplementary area north east of Fair Oak)

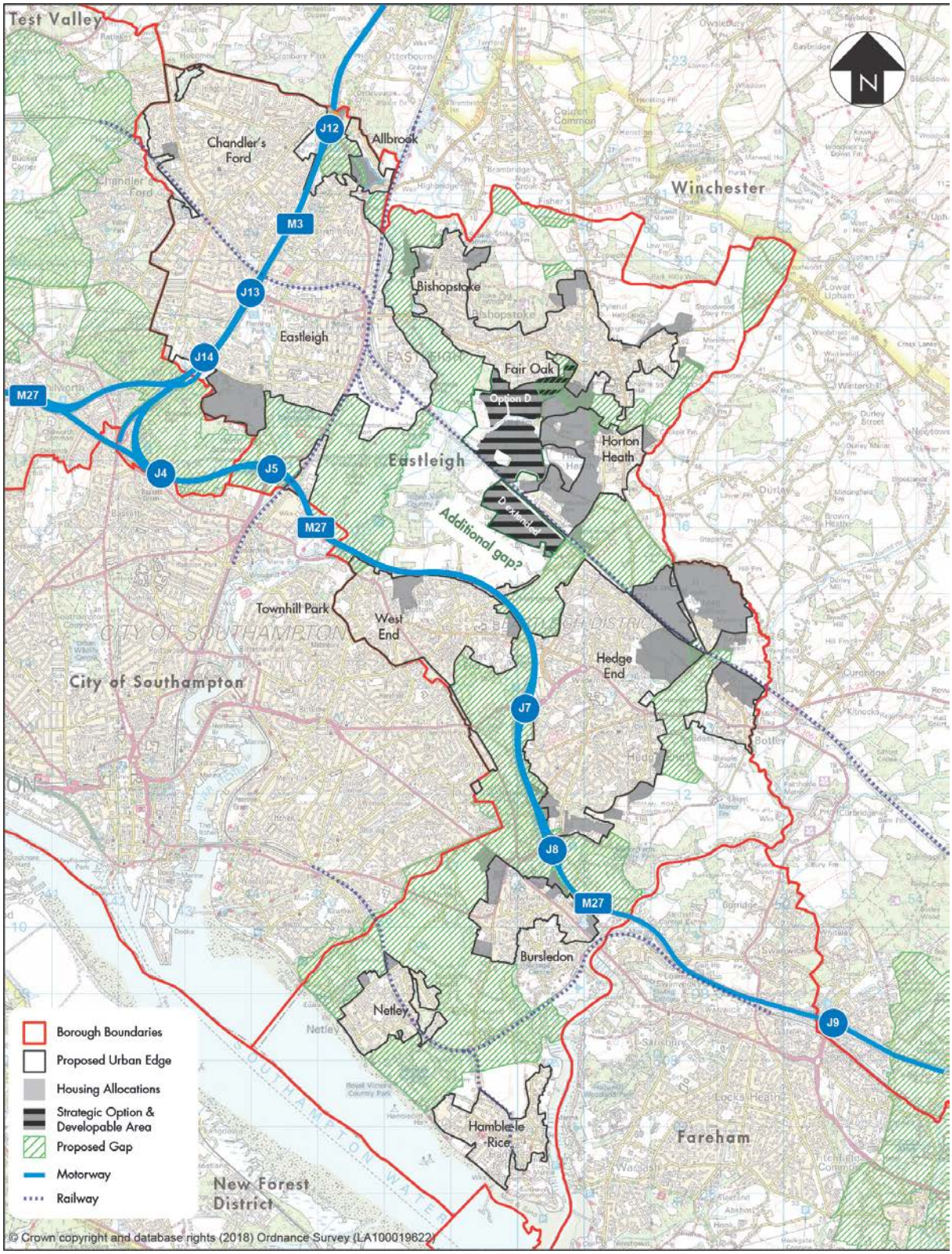


7.7 If option D were developed with the supplementary area immediately to the south, the railway line boundary (in cutting or embankment) would be breached. Based on the supplementary area as set out in this paper, the

edge of the development would simply follow field boundaries (albeit sometimes tree lined) and a part of the supplementary development may appear on elevated land. The gap to Southampton / West End would have a width of approximately 1 km – 1.25 km. In broad terms the width of this gap may still be appropriate in itself but the boundaries are less likely to be as strong, and the development may start to coalesce with some of the scattered 'urban fringe' development along Allington Lane (for example the Roddington Forge area). The gap with Hedge End would be 1 kilometres. The position is illustrated by map 7. Overall it is considered that option D would retain a stronger gap if the supplementary development were located to the north east of Fair Oak, and the railway line maintained as the boundary.

7.8 It should also be noted that option D would involve completely closing the perception of a gap between Horton Heath and Bishopstoke, a gap which is already reduced as a result of permitted development west of Horton Heath and at Fir Tree Farm.

Map 7: SGO D Countryside Gaps (with supplementary area south of D)

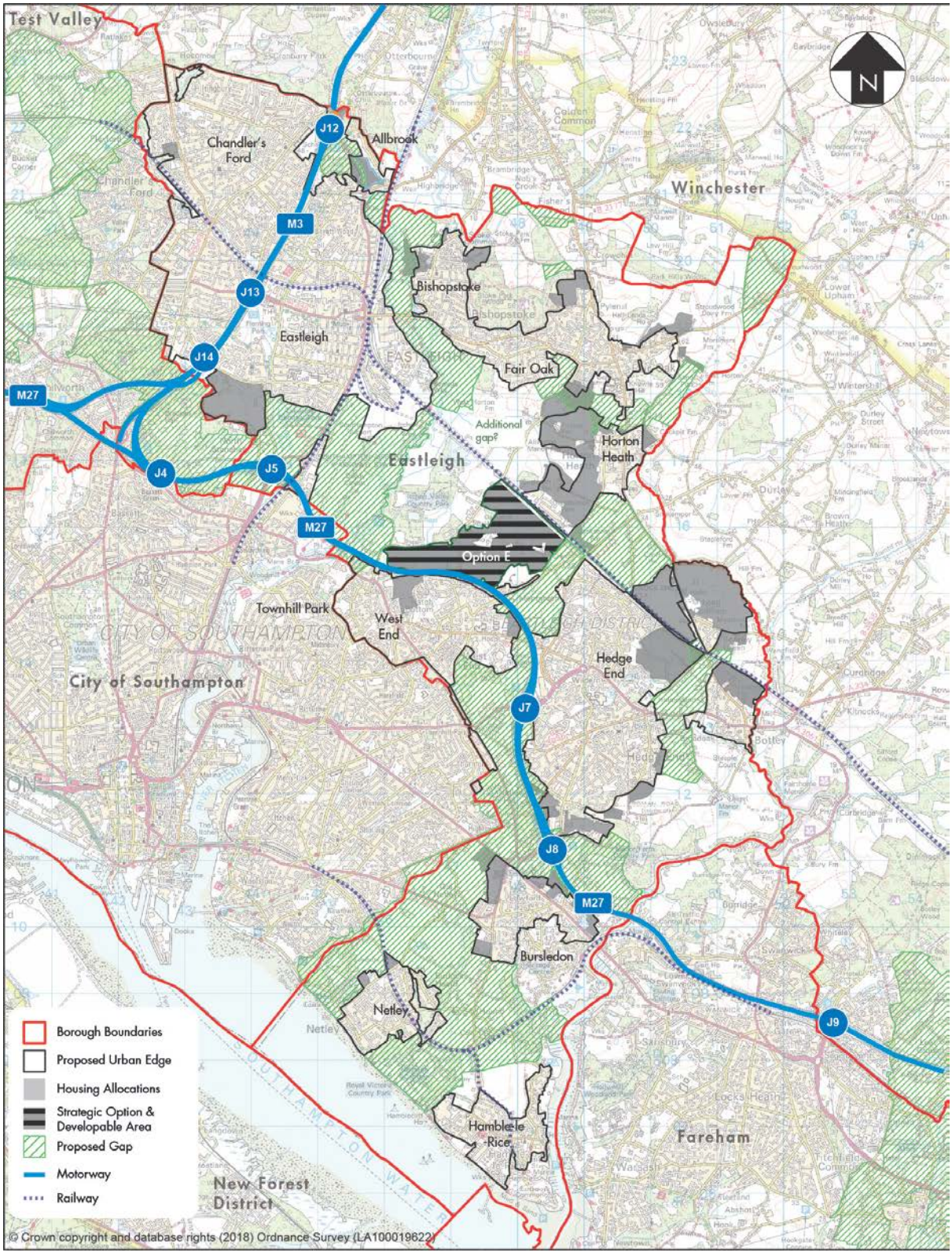


7.9 If option E were developed, it is considered that the area to the north (the undeveloped option D area) would form a weaker countryside gap to Bishopstoke / Fair Oak / Horton Heath. This and surrounding areas would at present (without taking account of permitted development) create a slightly

narrower gap of approximately 1 kilometre in places and wider gap of up to 2 kilometres in other places. However with the permitted development at West of Horton Heath / Firtree Farm / Chalcroft Distribution Park the remaining gap would simply be between option E and Bishopstoke. In itself this would be approximately 1.25 km wide at its narrowest point. However this area is already compromised as a potential gap by the permitted development, which already narrows the gap between Horton Heath and Bishopstoke to approximately 0.25km to 0.75km, and would create an urban influence in at least parts of the remaining area being relied upon to provide a countryside gap, particularly in the northern half of that gap. This area already contains some scattered 'urban fringe' development. More broadly it would mean that if option E were fully developed, there would be no gap between Southampton / West End, the option E development, and the already permitted extensions to Horton Heath. This would mean that in the main, neither the motorway nor the railway line would be forming a strong boundary marking an edge to development. Furthermore, in strategic terms there would be a continuous band of development from central Southampton to Horton Heath and, with a small gap, to Fair Oak, a distance of around 11 kilometres. The gap and continuous band of development is illustrated in Map 8.

7.10 It should also be noted that option E would lead to a narrow gap between the SGO and Hedge End. Based on the assumed development capacities, there would be a gap in the region of 0.3 kilometres.

Map 8: SGO E Countryside Gaps



7.11 For clarity, it is considered that if neither SGOs D nor E were selected there would not be a need to designate a countryside gap. In addition this section

only assesses the relative merits of SGOs D and E from a countryside gap perspective. Other planning factors also affect the relative merits of each option.

7.12 In conclusion, in terms of countryside gaps, options B/C, C or D (particularly with supplementary development to the north east of Fair Oak) are considered to be the better options, with greater impacts associated with option E.

Countryside Gaps: Sustainability Appraisal (SA) – June 2018

7.13 The following sustainability indicator is relevant to this section:

Table 39: Sustainability Appraisal for Countryside Gap Issues

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
12.1	Separation of settlements	Better	SGO B/C scores the same as SGO D but better than SGO E, as SGO B/C will leave at least some gap with neighbouring settlements	SGOs will maintain suitable gaps

7.14 The SA indicates that SGO B/C (or D) scores better for this issue. Overall the Council considers the SA supports the Council's assessment that SGO B/C scores well in countryside gap terms.

8. Landscape sensitivity

Landscape Sensitivity Appraisal

8.1 The Council has prepared and published a landscape sensitivity appraisal of the SGOs[37]. This is a relatively 'high level' assessment sufficient for comparing the relative merits of each location. It assesses which areas of land within each SGO have high, moderate and low sensitivity to change.

8.2 Appendix 1 in the appraisal sets out the assessment criteria. These consider landscape according to physical, experiential, habitat, historic and visibility factors. In summary land with higher sensitivity to change tends to have more of the following features: physical variety (e.g. topography, land cover); a lack of human features / modern development; a strong / small scale landscape pattern; remoteness and tranquillity; habitat diversity and ancient woodlands; a strong landscape history; open expansive views; high visibility (from important receptors); and prominent distinctive skylines. Land with lower sensitivity to change tends to have more of the opposite features.

8.3 The study assesses each part of each SGO. The following is a summary from the study of the general description of each SGO; the areas with high sensitivity to change (the descriptions of areas with moderate and low sensitivity to change are not repeated below); and the high level guidance for development from a landscape perspective (focussing primarily on where the report advises development not to take place).

Option B – Allbrook

(Section 4.1)

<u>General description:</u>

8.4 Topographical variety with varied land cover.

<u>Areas with high sensitivity to change:</u>

8.5 The ancient woodland at Lincoln's Copse. (Note this is adjacent to but outside the development allocation).

<u>High level guidance:</u>

8.6 Avoid development of Lincoln's Copse.

[37] Draft landscape sensitivity appraisal of sites being considered for strategic development – April 2017

Option B – North of Bishopstoke

(Section 4.2)

General description:

8.7 Relatively strong topographical variety, with some distinguished landscape elements (e.g. large areas of adjoining woodland). Views towards the exposed skyline are particularly sensitive from Colden Common.

Areas with high sensitivity to change:

8.8 Part closest to Colden Common is relatively remote, visible from footpaths and has a distinctive skyline.

8.9 South and west of Hall Lands Copse is remote, exposed and visible from long distances.

8.10 High land at Tippers Copse has parkland trees and an exposed skyline.

High level guidance:

8.11 Development should avoid the high land nearest Colden Common and the most sensitive high ground at Hall Lands Copse and Tippers Copse, and avoid breaking the wooded skyline from Winchester Road.

Option C – East of Fair Oak

(Section 4.3)

General description:

8.12 Relatively strong topographical variety with some distinguished landscape elements (e.g. woodland).

8.13 Most of the site is separated from Fair Oak by topography and small copses and has a predominately rural character, although power lines cross the site.

Areas with high sensitivity to change:

8.14 More open land in north and east with historic parliamentary enclosures, and close to the South Downs National Park and Lower Upham.

8.15 Narrow strip of land near Gore Copse on rising ground visible in medium long views.

High level guidance:

8.16 Development would need to avoid breaking the tree dominated skylines on higher ground, damage parkland character and protect the separation with Lower Upham. Longer views from higher ground within the South Downs

should be taken into account to avoid adverse impacts on the designated landscapes.

Option D – South of Bishopstoke

(Section 4.4)

General description:

8.17 The SGO divides into three areas.

Areas with high sensitivity to change:

8.18 Distinctive wet woodland at Quob Pond.

8.19 Wooded stream courses and ponds have a local influence of the landscape character.

8.20 Distinctive oak dominated woodland at Hearts Copse, connected to surrounding hedgerows and copses.

High level guidance:

8.21 Development should avoid breaking the skyline on ridges and high ground.

8.22 The historic setting of Allington Manor may be suited to open space.

Option E – West End North

(Section 4.5)

General description:

8.23 Topographical variety and good diversity of landscape elements. A limited range of rural uses and influenced to a limited extent by the urban edge. Some relatively remote elevated central areas with potential inter visibility in winter months.

Areas with high sensitivity to change:

8.24 High central relatively remote land with long views out and setting to Winslowe House.

8.25 Mears Copse woodland with stream and pond potentially over looked by higher ground.

High level guidance:

8.26 Development should be avoided in more elevated sections around Winslowe House.

Comparison of SGOs

8.27 Table 40 sets out the areas of each SGO (percentage and total hectares) which lie within each classification.

8.28 The table is a straight comparison based on the total areas within each SGO, (the areas considered by the landscape appraisal), irrespective of whether all areas are to be developed as part of that SGO. This creates a 'level playing field' for assessment. An SGO could be delivered whilst ensuring that some of the areas with a high sensitivity to change are not directly developed. For example, based on the Council or developer masterplans, parts of the areas of high sensitivity associated with SGO B/C[38] would be outside the development area and form part of the wider countryside, and parts associated with SGO E[39] would be open space, albeit more surrounded by development. Furthermore other areas of high sensitivity could be developed carefully (for example with large plots and significant tree planting). The latter approach together with the landscape setting, could create an attractive living environment for the new residents. None of the landscapes in the SGOs are designated landscapes protected by the NPPF. Therefore it is considered that the extent to which development occurs within areas of higher sensitivity is a matter of planning balance, considering landscape impact alongside other planning factors set out elsewhere in this report.

Table 40: Landscape Sensitivity of SGOs

	B/C	C	D	E
High	23% (75 ha)	13% (30 ha)	4% (6 ha)	19% (35 ha)
Moderate	43% (140 ha)	43% (102 ha)	18% (27 ha)	54% (103 ha)
Low	35% (115 ha)	44% (105 ha)	77% (114 ha)	27% (51 ha)
Total	100% (330 ha)	100% (237 ha)	100% (147 ha)	100% (189 ha)

8.29 The Table illustrates that the majority of all SGOs are considered to have moderate or low sensitivity to change. SGO B/C has a slightly higher percentage of high sensitivity land than SGO E, higher than SGO C, and significantly higher than SGO D. SGO E has a lower percentage of land classed as low sensitivity than SGOs B/C or C, and significantly lower than SGO D.

[38] north and north west of B and north east of C

[39] associated with Winslowe House

8.30 The Table illustrates that SGO B/C has a significantly higher total area of high sensitivity land, more than double SGOs E or C, and much more still than SGO D.

8.31 It should be noted that SGOs D and E would need some supplementary development elsewhere in the countryside. The potential location for supplementary development to the north east of Fair Oak is predominately a mixture of landscapes with high and moderate sensitivity to change; the location to the south of SGO D is predominately moderate with some high and low sensitivity to change. Therefore the gap between SGOs B/C and D or E in terms of more sensitive areas is likely to be slightly smaller than set out in the table[40].

8.32 Overall it is considered that SGOs B/C would have more impact on landscapes classed as having high sensitivity to change, and that SGO D would have the least impact, whilst noting that none of these landscapes are protected by policy.

SGO B/C (or SGO C) and the South Downs National Park

8.33 The Council has a statutory duty to have regard to the purpose of national parks, including when considering development which might impact on the setting of a park. This includes conserving and enhancing the natural beauty, wildlife and cultural heritage of parks (whilst also recognising the need to foster the social and economic wellbeing of their communities).

8.34 Option C is the only area which is close to the South Downs National Park. There is a local view from a footpath on the boundary of the Park to the land in the north east of option C, which has been classed as having higher sensitivity to change in the Council's landscape assessment. However for these reasons this land is not included within the SGO policy area for development. It is understood there are no other significant local views from within the National Park to the proposed development area. In addition, consideration needs to be given to whether there could be long views into SGO B/C from high ground within the Park. The South Downs National Park Authority has identified 'view sheds' from key points, and the nearest is 7km away. It is understood that any views of the development will appear very remote in this context and that development will have little or no impact on the Park. The South Downs National Park Local Plan[41] refers to the importance of dark skies and sets out three zones of importance. However the part of the Park closest to the SGO is not within these zones. The Eastleigh Local Plan SGO policy S5 states: "Lighting will where possible contribute to 'dark sky' objectives".

[40] Although it is recognised that SGO E requires a smaller area of supplementary development, creating more flexibility to locate it to avoid direct development of the high sensitive areas.

[41] Submission Plan policy SD8

Landscape: Sustainability Appraisal (SA) – June 2018

8.35 The following sustainability indicator is relevant to this section:

Table 41: Sustainability Appraisal for Landscape Issues

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
12.2	Character, views and setting	Equal		See below

8.36 The SA is a strategic assessment. It considers in general terms whether or not there will be a significant landscape change. On this basis each of the SGOs scores the same (with a significant negative – uncertain score) because they will all involve the urbanisation of significant areas of countryside. (The uncertainty relates to the potential to mitigate impacts through the design of the development). The more detailed Council assessment has also considered the landscape sensitivity of the different areas of countryside affected. On this basis it recognises that SGO B/C will have more impact because it will affect more areas of landscape with a higher sensitivity to change. Nevertheless the SA is a useful reminder that each of the SGOs will have a major impact on the countryside.

9. Biodiversity

Introduction

9.1 The NPPF sets out national policy guidance on environmental and other matters. In that context this section provides a high level assessment of the relative potential of each SGO to affect biodiversity prior to implementing any mitigation measures. This provides a broad brush 'level playing field' to inform a comparative assessment of the 'pros and cons' of each SGO.

9.2 The final Sustainability Appraisal also provides a strategic assessment of the SGOs from a biodiversity perspective. The SA is a separate process, though it has informed the plan-making process throughout, and is therefore relevant to this section and summarised below.

9.3 The Habitat Regulations also apply in respect of international designations, so that a Habitat Regulations Assessment (HRA) is required. An HRA Screening Assessment was undertaken on all the Strategic Growth Options set out in the Issues & Options paper in 2015. A full HRA has now been prepared on the 'proposed submission' Local Plan. These are summarised as necessary below, though it should be noted that this section is not part of the HRA for the 'proposed submission' Local Plan as it is a broad brush assessment and considers different options. (The role of the HRA, in line with the Habitat Regulation 63, is to focus on whether or not the 'proposed submission' Local Plan will – taking into account its mitigation measures - have an adverse effect on the integrity of any European Sites. It is not to consider alternative options).

9.4 The HRA on the proposed submission Local Plan concludes that the Local Plan (including SGO B/C) will not have an adverse effect on the integrity of international designations once mitigation measures are incorporated. (For completeness a very brief summary is provided at the end of this section. However the HRA should be referred to regarding the specifics for the Local Plan proposals). It is worth noting at this stage that the more broad brush comparative assessment below, although not a HRA, indicates that any of the other SGOs are likely to require mitigation measures as well.

Designations and Policy

9.5 This section sets out the designations (which are all relevant to each SGO) and the associated regulations and policy related to these designations.

<u>Internationally important designations</u>

9.6 The River Itchen Special Area of Conservation (SAC) is of international importance for the following qualifying habitats: chalk river habitats with floating vegetation often dominated by water-crowfoot; and the following qualifying species: southern damselfly; otter; and white clawed crayfish, brook lamprey, Atlantic salmon, bullhead.

9.7 The Solent and Southampton Water Special Protection Area (SPA) and Ramsar site; and the Solent Maritime Special Area of Conservation (SAC) are of international importance for their wetland habitats and the breeding, migratory and over wintering birds they support, as well as various rare plants and invertebrates such as Desmoulins whorl snail.

9.8 The New Forest SPA is also of relevance regarding strategic recreational disturbance.

9.9 The SACs, SPA and Ramsar sites are protected under a European or international Directive / treaty, which has been transposed into English Regulations, and by policy. These are designed to ensure there is no adverse effect to the integrity of such sites from plans/projects (alone or in-combination), taking into account how the development will be implemented and controlled (i.e. to include 'mitigation' measures to ensure no adverse impact). Otherwise a plan can only proceed if there is an imperative reason of overriding public interest (IROPI) and no suitable alternatives.

9.10 The NPPF (para. 119) explains the presumption in favour of sustainable development does not apply where development requiring appropriate assessment is being considered, planned or determined. By para 118 it also requires various types of site to be given the same protection as European sites, including Ramsar sites, potential SPAs/SACs and sites required as compensatory measures for adverse effects on SACs/SPAs.

Statutory nationally important designations

9.11 The River Itchen Site of Special Scientific Interest (SSSI) is of national importance for (in brief summary) classic chalk streams and river, fen meadow, flood pasture and swamp habitats. Protected species in addition to those in the SAC designation include nationally protected water voles and an assemblage of breeding birds. In the main this covers exactly the same area as the River Itchen SAC, although the SSSI does extend to a small number of additional areas.

Non-statutory locally designated sites; ancient woodlands and priority habitats

9.12 The SGOs include or are adjacent to locally designated Sites of Importance for Nature Conservation (SINCs). There are various locally designated woodlands which in national terms are a 'priority habitat' and (in the case of ancient woodlands) an 'irreplaceable' habitat.

9.13 In brief summary, the NPPF (109 – 110, 113 – 114, 117 – 118) explains the aim is to minimise impacts on such designations to ensure there is no net loss of biodiversity and where possible a net gain is achieved; recognise the relative importance of different international, national and local designations and plan strategically and positively for networks of biodiversity and green infrastructure; preserve, restore and re-create priority habitats; allocate land with the least environmental value where consistent with other policies of the NPPF; avoid significant harm (by locating development on less harmful sites)

or else adequately mitigate that harm; avoid (alone or in combination) an adverse effect on an SSSI unless the benefits of development clearly outweigh the impacts on the SSSI and broader network of SSSIs; incorporate biodiversity in and around developments; and refuse development resulting in the loss or deterioration of ancient woodlands and trees unless the need for and benefits of the development in that location clearly outweigh the loss. (The draft NPPF [para 173 c.] maintains the 'no loss or deterioration' approach and changes the caveat to "wholly exceptional reasons" and with a suitable mitigation strategy, citing in an example of infrastructure projects [including national projects] where the public benefit would clearly outweigh the loss).

Potential for Impact on International Designations

Introduction

9.14 SGOs B/C, C, D and E are in the general vicinity of international designations, and could have the potential to generate the impacts described below, for example in terms of the river tributaries flowing into or the air quality around the River Itchen SAC. SGO B/C also includes a new link road. At two locations the route traffic would cross the River Itchen (at specific points where the SAC designation is essentially the river itself) or run very close to the wider River Itchen SAC/SSSI. At these points the link road is the existing Highbridge B-class road, which in places would be realigned. This re-alignment would include a replacement bridge at one location across the River Itchen SAC (one of the two crossing points referred to above, so again at a specific point where the SAC designation is the river itself), and would also bring the road closer to the wider River Itchen SAC designation.

Atlantic salmon, otters, (water voles)

9.15 Atlantic salmon, otters and (nationally protected) water voles traverse the River Itchen and main tributaries such as the Lower Itchen. There is a potential effect in relation to option B/C in that the link road will cross a tributary, and the realignment of the existing road may change the crossing of the River Itchen. There is a potential effect in relation to option D in that it will introduce development around the Lower Itchen. There is a potential effect in relation to all SGOs in that otters (but not water voles) are also considered likely in smaller numbers to traverse the smaller water courses which pass through each of these development areas.

9.16 A Habitat Regulations Assessment has been undertaken to identify the avoidance and mitigation measures which would need to be incorporated. For example, measures could include ensuring that any new bridge is carefully designed to ensure the effective passage of these species; management of the construction of the bridge; and keeping the areas around watercourses in a natural state free of development, again to ensure effective passage. The HRA should be referred to for the full detail.

9.17 It should be noted that, were proposals for an entirely new road crossing directly over the River Itchen SAC to be made in association with SGOs D or E, this would also have the potential for an effect. However, this comparative assessment has assumed that neither options D nor E would propose a new road crossing of the River Itchen. (For example, no such link road is currently proposed by the promoters of option E).

Hydrology

9.18 Headwaters and watercourses which feed into the River Itchen or Solent SAC / SPAs and River Itchen SSSI are important features in maintaining their water quality and supply/flow.

9.19 The headwaters (the start of the water courses) are where the 'life of the river' starts. Option D has no headwaters; option E one small headwater; and options B/C and C (on higher ground) significantly more headwaters. (It should be noted that SGO D and E may require further development in a part of SGO C as well, in the area of a headwater). These water courses flow towards the River Itchen SAC/SSSI (and in some instances to the Solent SPA / Ramsar / SAC via the Hamble). They include, for example, the Bow Lake to the north east of options B/C; and also the Lower Itchen, a significant watercourse which runs through option D (for which the cumulative effect alongside the West of Horton Heath development would need to be considered). There are watercourses which run through each of the SGOs, and adjacent or close to these SGOs. The proposed link road associated with option B/C crosses the Bow Lake.

9.20 To this end a hydrology study has been undertaken to identify the avoidance and mitigation measures which would need to be incorporated. Such measures could include keeping the areas around headwaters and their supply (underground reservoir or surface basin) in a natural state free of development; protecting surface water flows into water courses; and implementing sustainable drainage. The HRA and hydrology report should be referred to for the full detail.

Southern Damselfly

9.21 Development within the Borough, in combination with development in the wider area, is likely to lead to more vehicular traffic crossing the River Itchen SAC / SSSI on the existing M27 / A27, Bishopstoke Road and Highbridge Road (which as part of option B/C would also be re-aligned to be slightly closer to the River Itchen SAC/SSSI). It is considered that there is potential for air pollution from traffic to have an effect on the southern damselfly and that the potential for such an effect should be assessed in light of the 'precautionary principle'.

9.22 Table 42 below summarises the transport model results; and the results of a survey of damselfly which has been completed.

Table 42: Increase in Traffic Flows (2015 -2036) and Southern Damselfly Concentrations

	Local Plan development scenario including SGO:							Southern Damselfly (SD) Survey
	B+C	B+C	B+C	C plus	D	D	E	
Transport model scenario:	DS1	DS2	DS3	DS4	DS5	DS7	DS6	
	without link road	with link road and do something	with link road and do more		sup. dev. at Fair Oak	sup. dev. to south	sup. dev. at Fair Oak	
B3335 Highbridge Road	5,457	5,071	7,049	5,189	3,433	3,228	3,744	High concentration
B3037 Bishopstoke Road	4,186	5,445	4,576	2,952	5,001	5,051	2,185	Moderate concentration
M27	48,613	48,177	47,643	48,421	47,775	47,868	48,180	Moderate to low concentration and no SD habitat to south, so not breaking up SD habitat.
A27	652	2,888	2,040	-152	-225	-1,072	498	
Total	58,908	61,581	61,308	56,410	55,984	55,075	54,607	

Total two way flows (AADT)

9.23 The total increase in traffic relates to not only the full Eastleigh Local Plan development but to all proposed development within and beyond South Hampshire and general traffic growth. It therefore reflects the 'in combination' assessment required by the Habitat Regulations. (Proposed development is that which is completed, permitted or allocated, and the further allocations required to meet the full Local Plan / PUSH Spatial Position Statement targets). It is understood that standing advice from Natural England indicates that a daily increase in traffic flows of 1,000 vehicles or more may have the potential for an effect on air quality and should be assessed.

9.24 The table indicates, based on the transport model results, that a Local Plan based on any of the development scenarios would result in broadly similar (e.g. significant) total in combination increases in traffic crossing the River

Itchen SAC, ranging from 54,607 to 61,581 vehicles. The highest flows of over 61,000 vehicles relate to SGO B/C with the link road (model scenarios DS2 and DS3). The table also indicates that all of the development scenarios generate total increases which exceed the 1,000 vehicle threshold on each of the roads. The only exception is the A27, where the threshold is only breached with SGO B/C and the link road. In short the table indicates that a Local Plan based on any of the SGO development scenarios has the potential for an effect without mitigation. The table also indicates that in relation to the 4 roads, the highest concentration of southern damselfly is found closest to Highbridge Road. A Local Plan based on any of the SGO development scenarios would lead to a significant increase in traffic on this road (i.e. significantly above 1,000 vehicles). The increase would be greatest with SGO B/C, the link road, and 'do more' transport interventions (DS3). (DS2 and DS3 include the new link road. At the points where the link road is close to the SAC it is following the existing B3335 Highbridge Road, albeit this road is slightly re-aligned towards the SAC to improve the approach to the rail bridge for HGVs). It is worth noting that SGO B/C with the link road and 'do something' transport interventions (DS2) results in a lower increase than the 'do more' interventions (DS3). This is because the 'do more' interventions make the link road route to the M3 more attractive to use. It is also worth noting that promoting major development in SGO B/C or C without the link road would also result in higher increases along the existing B3335 Highbridge Road as a result of more traffic in the area generally.

9.25 It is important to add that the judgement as to whether the Local Plan would have an adverse effect should be based on the 'in combination' effects with other plans and programmes (the traffic flows above do relate to the 'in combination' effects). However if this demonstrates that mitigation measures are required so as to avoid an adverse effect, the Local Plan development is only required to implement the mitigation measures relating to its own adverse effects.

9.26 A Southern Damselfly Survey, Habitat Assessment Study and Conservation Strategy have been completed. These identify that there has been a decline in the southern damselfly population which is believed to be due to a loss or degradation of habitat as a result of poor land / water management and pollution. This has led to a fragmentation of, and increased risk to, the meta-population. These studies also indicate that a high proportion of areas in the River Itchen valley have a high ecological value with respect to their potential for habitat enhancement and creation provided that they can be delivered. These measures could include scrub clearance, ditch management, changes in land management, and (re)creating wet ditches (although in some cases more detailed testing from a hydrological perspective would be required). The Conservation Strategy explains it is also important to consider habitat enhancement and creation on sites within and in-between southern damselfly populations: "This combined approach would not only strengthen the robustness of the individual sites themselves, but also deliver an effective strategic approach to consolidate and expand the Southern Damselfly meta-population in the lower part of the Itchen Valley" (Discussion section 3rd paragraph). It is considered that mitigation could be achieved by the means

set out in the HRA, including by delivery of a suite of habitat enhancement and creation opportunities of the kind identified in the draft Conservation Strategy.

9.27 The transport model results have been used to undertake detailed air quality modelling to inform the Habitat Regulations Assessment. This concludes that there will be no adverse impact provided mitigation measures are implemented, drawn from some of the measures identified in the Conservation Strategy.

Recreational Disturbance

9.28 Housing development in the SGOs, and Local Plan sites more generally, will lead to an increase in the local population. There is the potential for strategic recreational disturbance from more visitors on over wintering birds on the Solent SPA / Ramsar / SAC. Option E is the closest to the Solent so is likely to have the potential for the most effect, and options B/C and C are the furthest away. The PUSH Councils and other Solent authorities have been working with Natural England and others to prepare a now agreed definitive mitigation strategy. The completed HRA (page 53) indicates the agreed buffer zone in that strategy. Option E and a part of option D are within this buffer zone where the strategy judges there to be the potential for an adverse effect, whereas options B/C lies outside (parts of C are the closest, approximately 1km beyond the buffer). It is considered that, based on the approved strategy, any adverse effect can be mitigated.

9.29 The Council is working with the New Forest National Park Authority, other local Councils and Natural England to assess to what extent development in different parts of the area could create recreational disturbance within the National Park. For now it is noted that all the SGOs are some distance, and broadly a similar distance away from the Park, and so it is considered unlikely that if any effects were to be generated, one SGO would have a different effect to the others. The Council continues to work with the other bodies above on this issue. (It should be noted that the completed HRA considers mitigation would be required with regard to the Local Plan. The Council considers that would be the case for a Local Plan based on any of the SGO options).

9.30 Options D and E will locate homes closer to, and are therefore likely to encourage more visits to, the River Itchen SAC / SSSI than options B / C or C. The Itchen Valley Country Park is already heavily used, this is likely to put more pressure on other parts of the SAC / SSSI.

Other disturbance

9.31 The development in options D and possibly E could be sufficiently close to the River Itchen SAC / SSSI for light spill to occur. Development in options B/C and C are further away, but there could be the potential for light spill in association with options B/C if additional street lights were placed on the existing or new roads forming the link road. In either case if there were to be an effect, an appropriate lighting design would need to be installed.

Water Services

9.32 All SGOs may, through additional water abstraction and waste water discharge, have an impact on the water quality of the River Itchen and/or Solent SACs / SPA. Careful management of water supply and waste water is needed. PUSH have just approved an Integrated Water Management Strategy to address these issues, working with Natural England and the Environment Agency. Together they will continue to work together to implement an action plan for the interventions needed in the medium to longer term. It is worth noting that the Environment Agency operate a licence system for these issues to protect the environment. Therefore any risk is considered to relate not to the environment, but to the delivery of development. However Southern Water has both a statutory duty to supply and treat water and an established financial mechanism to invest in upgrades. The Local Plan includes a policy explaining that development will be phased alongside any necessary upgrades.

Non-native invasive species

9.33 The completed HRA identifies that mitigation would be require to ensure no adverse impact from non-native invasive species. The Council considers this would apply to a Local Plan based on any SGO.

Potential Effect on National / Local Designations

Woodland

9.34 Each SGO is close to at least some woodland, all of which is protected as a Site of Importance for Nature Conservation (SINC) and priority habitat. Any woodland habitat takes a long time to replace. However none of the SGOs need involve the loss of protected woodland. It is also important to ensure that any development nearby does not affect either the woodland itself or the habitat and species it supports (such as otter, badgers, bats, butterflies, and potentially dormice).

9.35 SGO B/C is adjacent to 5 ancient woodlands[42] and SGO C adjacent to 2 of these ancient woodlands, classed by national policy as irreplaceable habitat, and which host a range of (priority) species. They also benefit from interconnected habitat (e.g. hedgerows) which cross through the potential SGO area. SGOs D and E are adjacent to generally less extensive wet woodlands. Two areas are within option D[43], and 5 within or adjacent to

[42] 400+ year old trees; or continuous woodland habitat (thus with important ground habitat / nutrients). 4 of these consist of ancient trees: Upper Barn Copse; Hill Copse; (most of) Hall Lands Copse; and Chestnut Gully / Park Hills Wood (mainly in Winchester). 1 of these is continuous woodland with replacement trees which is logged and open to recreation: Stoke Park Woods. There is also a 6th woodland associated with the SGO, Lincoln's Copse, adjacent to the Allbrook Hill site.

[43] Hearts and south of Allington Manor School. In addition Quobleigh Pond is adjacent to development now with a resolution to permit.

option E[44]. There is less inter connecting habitat remaining between these habitats, as it has already been lost through field enlargement. Within Hampshire wet woodlands are rarer than ancient woodlands, need supporting wet conditions, and still take a long time to be replaced (although not as long as ancient woodlands).

9.36 Overall SGO B/C is closer to more woodland classed as irreplaceable habitat, and the SGO itself includes interconnecting habitat. The same is true to a lesser extent of SGO C. It should be noted that a Local Plan based on SGO options D or E is likely to need further housing development, which may be in part of option C. This may also have the potential for impact on some woodland, which may reduce the difference between SGOs to some extent.

9.37 The standing advice is that a minimum 15 metre wide development free buffer needs to be maintained to protect the ancient woodlands themselves. However a strategic approach is needed to protect the movement corridors of the species hosted by the woods, including 'dark routes' for bats. The promoter of SGO B/C has completed a survey of bats (undertaken by White Young Green, August 2017). On this basis it is considered that the development free buffer adjacent to the ancient woodlands should be extended, to generally be between 30 to 50 metres and the area between Upper Barn Copse and Stoke Park woods maintained as open space. More generally to support a range of species, hedgerows and a small (e.g. 5 metre) buffer around them maintained, and hedgerows extended where appropriate. Where the open space or hedgerows are 'punctured' (by the link road or local access points) mature overarching / interlocking trees and / or animal tunnels should be provided. Lighting should be appropriately located and controlled. Visitor management plans for the woodland should be created. Two woodlands (Stoke Park Woods and Upper Barn Copse) are already designated public open space with public access, and such plans could help to manage existing visitor patterns as well. This overall approach is being factored in to the emerging masterplan to inform the Local Plan. By way of background context, this approach will ensure that areas B/C with development will maintain a higher level of habitat connectivity than areas D or E without development (as a result of the field enlargements which have already occurred).

9.38 Further detailed consideration will be required at the development management stage. However it is considered that this package of measures adopts a robust approach and will ensure the Local Plan is consistent with national policy.

Great Crested Newt (GCN).

9.39 SGO D is close to the most significant GCN habitat / population[45]. A small part of SGO B/C and C is close to such a habitat / population[46]. A part of

[44] Three within the development: close to Winslowe House, including Home Cover; Duminel Copse; two are immediately adjacent or very close on the other side of Allington Lane: Ridgeway Copse / Withybed Covert; Bushy Copse.

[45] Quobleigh Ponds and the Lower Itchen

SGO E is within 500 metres of a GCN habitat / population[47]. On this basis it is considered that SGO D has the potential for a greater impact. Furthermore in relation to SGO B/C and E the GCN habitat / population is on the edge of or separated from the development, which will facilitate the creation of movement routes and management of any effects.

Other

9.40 An ecological appraisal for SGO B/C has been completed for the site promoter (by White Young Green, August 2017). In addition to the above habitats this identifies that parts of the site (e.g. around the Horton Heath golf course) are semi improved grassland which should be protected or replaced. The report identifies the full range of protected species supported by all the habitats listed above.

Habitat Regulations Assessment (HRA) Screening Report - 2015

9.41 The HRA Screening Report considered the 8 SGOs (options A to H) as originally set out in the Issues and Options paper. Its overall concluding statement (paragraph 9.1.1) is:

"This HRA is an intentionally broad analysis of the potential spatial development options that have been put forward as part of Eastleigh Borough Council's Issues and Options consultation. It identifies certain spatial options which present a greater number of impact pathways to European sites than others but does not conclude that any broad spatial option presents insurmountable issues regarding European sites. As the Local Plan is further developed additional iterations of the HRA will be undertaken culminating in a detailed HRA of the policies and allocations within the submission Local Plan".

9.42 Its conclusion with respect to each international designation is summarised as follows:

- Solent SAC / SPA / Ramsar – no particular option stands out as being substantially more favourable to these designations; B, D and E are most favourable as they pose the most limited impact pathways. All options do present pathways of impact (primarily the water quality pathway) but should be capable of being addressed through careful design, buffer zones to watercourses and elevated water quality standards. (Paragraph 4.6.1).

- River Itchen SAC – options G and F pose the least potential for likely significant effects through the disruption of otter passage, potential air quality impacts, potential water quality impacts and the introduction of non-native species, or noise and vibration disruption of migratory fish including Atlantic salmon. However all of these pathways could be substantially reduced (and potentially entirely eliminated) through adequate buffers

[46] Near the current golf course
[47] Hogwood gravel pit

(including 200 metres from the SAC where possible) and standard noise / vibration and water quality controls. "None of the Options pose a fundamental conflict with the River Itchen SAC that cannot be overcome by careful design and development practices". The proposal for a new link road across the SAC relates to options B / C or D. Any crossing should be where the SAC is narrowest (i.e. just the river itself, not the floodplain). This will minimise the need for construction work within the SAC and in particular avoid any land take from the SAC (for example for bridge piers). (Paragraphs 5.6.1 – 5.6.2).

- Emer Bog SAC; Mottisfont Bats SAC (both in southern Test Valley) – the Eastleigh Local Plan development is unlikely to lead to significant effects either alone or in combination with other projects or plans. (Paragraphs 6.6.1 and 7.6.1).

- New Forest SAC / SPA / Ramsar – given the involvement of the Council in delivering Forest Park and other green infrastructure, there will be no adverse effect on the integrity of these designations as a result of the Eastleigh Local Plan. (Paragraph 8.6.1).

9.43 It is considered that in general terms the HRA Screening Report supports the view that each SGO has the potential for an effect. The HRA for the proposed submission Local Plan should be referred to for the latest detail.

Biodiversity: Sustainability Appraisal (SA) – June 2018

9.44 The following sustainability indicators are relevant to this section:

Table 43: Sustainability Appraisal for Biodiversity Issues

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
10.1	Internationally / nationally designated sites	Equal		
10.2	Locally designated site	Equal		
10.3	Areas of nature conservation value	Equal		

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
10.4	Biodiversity network	Equal		
10.5	Ancient woodland	Equal		

9.45 The SA indicates that SGO B/C scores the same as the other SGOs. The Council considers this supports its own assessment.

Habitat Regulations Assessment on proposed submission Local Plan – June 2018

9.46 This HRA applies to the specific Local Plan and in line with the regulations does not assess alternative options. Therefore it is not directly applicable to the comparative assessment above. However, for completeness, it concludes that the Local Plan proposals (including SGO B/C) will not have an adverse effect on the integrity of international sites provided mitigation measures are incorporated in relation to the following issues.

Table 44: Issues where Local Plan requires Mitigation regarding Habitat Regulations Assessment

Potential for adverse impact:		Already addressed by strategic strategy in place?
From	On	
Atmospheric pollution	River Itchen SAC	
Strategic recreational disturbance	Solent and Southampton Water SPA / Ramsar	PUSH Solent Recreational Mitigation Strategy
	New Forest SPA	(Working group formed)
Noise / Vibration	River Itchen SAC	
	Solent and Southampton Water SPA / Ramsar*	

Potential for adverse impact:		Already addressed by strategic strategy in place?
From	On	
Hydrological impacts	River Itchen SAC	
Land outside European designations: -otter dispersal	River Itchen SAC	
Non native invasive species and site specific hydrological impacts	River Itchen SAC	
	Solent Maritime SAC*	
Water Abstraction	River Itchen SAC	Following a public inquiry process regarding increased abstraction from the Rivers Itchen and Test, a draft agreement has been reached between Southern Water and the Environment Agency (as at June 2018, subject to Secretary of State sign off).
Water Pollution	River Itchen SAC	
	Solent Maritime SAC	
	Solent and Southampton Water SPA / Ramsar	

*Refers to another site, not the SGO.

9.47 The HRA should be referred to for more detail.

10. Other Environmental Issues

Agricultural Land Value

10.1 All of SGOs B/C and the vast majority of SGO D are classed as having relatively low agricultural land value (grade 4), and a small part of SGO D is classed as having moderate agriculture land value (grade 3). SGO E is primarily classed as having higher agricultural land value (grade 2 or grade 3), with only a small part classed as of low value (grade 4). Development of SGO E would therefore involve the loss of the most higher value agricultural land.

Flood Risk

10.2 The PUSH Strategic Flood Risk Assessment (2016) indicates areas at risk of flooding, with zones 2 and 3 being the areas at medium or high risk of fluvial flooding. (It should be noted that for fluvial flooding this does not take account of climate change and therefore the areas at risk of flooding are likely to increase, although section 4.3 of the study explains that any increase in affected areas is likely to be slight).

10.3 No part of the SGO B/C development area is within flood risk zones 2 or 3. The new link road crosses a small area within flood risk zone 3 (a tributary of the River Itchen). The link road joins the existing Highbridge Road which already crosses a larger area in flood risk zone 3 associated with the River Itchen itself. (This includes the stretch of the Highbridge Road to be re-aligned immediately to the east of the rail bridge. Compensatory storage equivalent to the volume of the re-alignment would need to be created, which may be achieved by removing most of the existing alignment). The Council's hydrology report considers these issues in more detail. Small parts of SGOs D and E, around the tributaries of the River Itchen, are within flood zones 2 and 3. However it is assumed that the layout of development could avoid these areas.

10.4 SGO B/C is generally on higher land and so needs to be designed carefully to avoid increasing the risk of flooding elsewhere, for example from surface water runoff . This is likely to include incorporating undeveloped areas and sustainable drainage within and around the development. The hydrology study sets out the measures needed in more detail, and these are summarised in Section 2 on Delivery below. SGOs D and E are not on higher land but are sometimes close to existing urban areas on slightly higher land.

Noise / Air Quality

10.5 The southern extent of option E is adjacent to the M27 motorway, which is considered to be the most significant source of noise and air pollution relating to any of the options. However it is considered that appropriate layout and design measures could effectively mitigate such pollution.

10.6 Each of the SGOs will generate more traffic and therefore potentially more noise along existing roads. This may also affect air quality, if the traffic is passing through areas such as air quality management areas where this is already an issue (this is the subject of a specific air quality study, although air quality has already been assessed in relation to the habitat regulations assessment). The specific levels of extra traffic in relation to the South Downs National Park are set out in the transport section.

10.7 The new SGO B/C link road will mean that some existing properties will become affected by traffic noise, for example in the Highbridge area where some properties are set away from the existing B-road noise but will be close to the new link road. The link road will need to be designed to mitigate the effects of noise where possible. Each SGO may be subject to noise from passing traffic as well (e.g. on Allington Lane or the new link road). The link road will also divert traffic from existing roads meaning that any increase in noise for properties along these roads could be less than it would be with the link road.

Minerals Safeguarding

10.8 The majority of options B/C and D are within a minerals consultation area as defined by Hampshire County Council (the minerals planning authority), in relation to sand and gravel deposits. None of option E is affected. In accordance with the adopted Hampshire Minerals and Waste Plan (2013) and associated SPD consideration would need to be given as to whether it would be appropriate to undertake the prior extraction of the minerals from options B/C or D, taking into account environmental and other factors. This will be determined at the planning application stage by an onsite survey. This may slightly affect the phasing of development. There is the potential for minerals to be extracted and used on site as part of the construction process, to minimise the amount of construction material / traffic which would need to enter the site.

Public Open Space

10.9 None of the area within SGO B/C and very little of the land within SGOs D and E are protected as public open space. Two small parts of the potential areas of SGO D and E are protected open space. However the layout of development could ensure that these continue to be protected as open space. There are a number of protected open spaces adjacent to the SGOs; most notably Stoke Park Woods and Upper Barn Copse adjacent to SGO B/C and the River Itchen County Park adjacent to SGO E.

Heritage

10.10 Table 45 sets out the built heritage assets within or adjacent to each SGO based on the Sustainability Appraisal (2015).

Table 45: Heritage Assets

	SGO B/C	SGO D	SGO E
Grade II listed building	2	3	2
Locally listed building	5 (including Little Dower House, Stroudwood and Mortimers Farms)	1	0
Areas of archaeological potential	4	0	0
Historic Parks and Gardens	2 (Stoke Woods Deer Park; and Fair Oak park)	2 (Allington Manor; Lakesmere School).	1 (Winstowe House)

10.11 It is considered that all of the options can be designed to protect the setting of listed buildings. At this stage it is assumed that any SGO could appropriately address archaeology (more detail with respect to SGO B/C is summarised in Part 2, the delivery section).

10.12 The 5 historic parks and gardens are all listed on the local Hampshire County Council Register of Historic Parks and Gardens. They are not nationally listed and therefore in terms of the NPPF are non-designated heritage assets.

10.13 The land at Fair Oak Park already has planning permission for residential development (Pembers Hill Farm).

10.14 The registered area of Stoke Woods Deer Park covers the woods and open fields to the north, and this landscape structure is a remnant of the deer park. However the deer park as a whole is not a designed landscape (e.g. in terms of earth shaping or placement of trees). Furthermore some of the key features of a deer park, such as wood pasture and veteran trees are no longer present (Stoke Woods has evolved). Instead it was originally managed as a deer park and subsequent management has overlain this (e.g. forestry, farming, recreation). Therefore the dominant landforms currently present are not a function of the heritage asset. There may be remnants of features such as park pales, tracks and hedgerows and woodland edges which have been designed to a degree. Some deer pales have been identified in the woodland and these would be unaffected by development. Any other features that are subsequently identified should be retained where appropriate. It will be important to set the development within the structure of the landscape and

create a balance between the development and semi natural landscape. Other responses to the heritage context could include the planting of new wood pasture, management techniques and public art.

10.15 Winslowe House is registered as a private park or garden. The house was built in 1847and is set in 2 acres of grounds in an elevated landscape (with a walled garden, mature trees, landscaped drive, lodge and cottage), all set in wider farmland. This therefore contributes to the setting of the gardens and house, helping to define its character and is of some relevance to its registered status.

10.16 Allington Manor is registered as a private residential property containing Sites of Importance for Nature Conservation and tree preservation orders. An original Allington Manor was recorded in the Domesday Survey (1086). The current estate includes a manor house, an early 19th century estate with parklands and ponds, including ornamental fishponds and two SINCs, mature trees, and remnants of the walled garden. The railway line crosses the site 300 metres south of the manor house. There have been extensions to the manor house, and the estate has been sub divided by various land sales.

10.17 Each of the SGOs would affect a locally registered historic park and garden. The asset associated with option B/C (the deer park) covers the more extensive area and is currently less affected by development but significantly less remains of the original deer park. The assets associated with D or E (Winslowe House or Allington Manor) have been affected to a degree by scattered development but continue to enjoy an open setting and are far more intact than the deer park.

Utility Infrastructure

10.18 Utility infrastructure affects a part of the following SGOs:

- SGO B/C – electricity pylons potentially affect the edges of the site; and an oil pipeline affects the edge of the site.

- SGO D – a gas main crosses a part of the site.

10.19 It is considered that these factors can be appropriately addressed through careful layout.

Other Environmental Issues: Sustainability Appraisal (SA) – June 2018

10.20 The SA indicators relevant to this section are:

Table 46a: Sustainability Appraisal for Other Environmental Issues

Ref	SA Issue	SGO B/C better or worse than D or E?	Reason (Council summary of LUC if in brackets)	Council comment
2.3	Sports facilities	Worse	Loss of East Horton golf course with B/C	
2.4	Public Open Spaced	Equal		Each SGO will provide new open space
5.1	Mineral resources	Slightly worse	(All SGOs same except supplementary area south of D does not include mineral resource)	Difference is marginal
5.2	Agricultural land	Better	(B/C better than E)	
5.3	Previously developed land	Equal		
5.4	Allotments / community farms	Equal		
6.1	Noise and AQMAs	Slightly worse	(All SGOs same except D Fair Oak supplementary area not close to AQMA, motorway, A road, railway)	B/ C only marginally worse, and is no worse than the other main SGOs
7.1 / 11.3	Green Infrastructure	Equal		
7.2	Flooding	Slightly worse	(All SGOs same except D south at low risk of flooding)	Difference is marginal because all SGOs predominately at low risk of flooding and layout can ensure development avoids higher risk areas
7.3	Coastal change	Equal		None of the SGOs are near the coast
11.1	TPO trees	Equal		
13.1	Historic environment	Equal		

10.21 The SA indicates that SGO B/C scores better or equal for most issues. SAs are intended as relatively strategic assessments. Where the SA scores SGO B/C as worse (and in some cases where it scores equal or better), further detailed assessment by the Council suggests the negatives associated with SGO B/C are less than first indicated. Overall the Council considers the SA supports the Council's assessment that SGO B/C scores well in transport and accessibility terms.

10.22 The SA has also compared SGO B/C to SGO C. Of the 47 indicators, the two SGOs scored equally except for the following two indicators which are relevant to this section:

Table 46b: Sustainability Appraisal for Other Environmental Issues (comparison with option C)

Ref	SA Issue	SGO B/C better or worse than C?	Reason (Council summary of LUC if in brackets)	Council comment
5.2	Agricultural land	Worse	B/C includes areas of higher quality agricultural land (grade 3)	There is no difference between the main development areas of SGO B/C and C – all are grade IV. It is understood the grade III land may be on the route of the link road.
6.1	Noise / AQMAs	Worse	New link road could increase air pollution and noise in some areas	The transport assessment now indicates that overall congestion will be less with SGO B/C with the link road. The Council is undertaking further air quality assessments.

10.23 The Council considers that the differences with respect to agricultural land are marginal. The difference is only of one grade and is understood to relate to the link road so affects a relatively small area of land. The conclusions with respect to noise and AQMAs will be kept under review once the air quality study is complete. However the transport assessment indicates that whilst the link road will increase traffic at that point, it will result in less of an increase in traffic or delays elsewhere.

11. Summary and Conclusion

11.1 This section summarises the relative merits of each SGO and reaches a conclusion on the preferred SGO.

SGOs: Summary

Transport and Accessibility

11.2 National policy promotes walking, cycling, the use of public transport and a reduction in car use, and explains development should be supported unless traffic congestion is severe. Option E is closer to Southampton but this is considered unlikely to have a major benefit given the wide range of destinations people travel to. Options B/C, and to a large extent C, and D (combined with nearby development), are considerably larger developments than option E. They would also integrate better with surrounding communities (particularly so in the case of options B/C or C). Therefore it is considered likely that these SGOs could support more new local facilities. The transport model suggests that generally these factors balance each other out. The average distance travelled is about the same from each option, as is the total carbon dioxide emitted (although with respect to the latter it should be noted that SGO B/C achieves this whilst also delivering more development). The transport model indicates that more people will walk or cycle to local facilities based on SGO B/C (although this remains a relatively small proportion of overall trips).

11.3 Options D or E might have the potential in theory for a form of rail access in the long term and this is considered at best very uncertain. Option B/C and C benefit from better existing bus services. It is also considered likely that the potential gap to bridge in achieving a commercially sustainable bus services is less for options B/C or D than for option E. (The position regarding option C relative to the other options is more mixed). Option D would provide the shortest new bus route to a key destination. On the assumption that viable bus services can be achieved, the transport model suggests that significantly more people would use public transport with option D (although this remains a small proportion of overall trips). However without these new services it is assumed that option B/C or C would perform better because they are better served by existing bus services.

11.4 In terms of the above issues there is considered to be little overall difference between the options. They all generate similar trip lengths. SGOs B/C or D have a slight advantage to SGO E in that they generate a higher level of walking / cycling or public transport trips.

11.5 Significant transport model / assessment work has now been undertaken. (A more detailed assessment of the M3 junction 12 needs to be completed). The transport model indicates the level of delays caused by the new Local Plan development. It indicates that, across the whole area, SGO B/C (with the new link road and ‘do more’ transport interventions) generates fewer delays than

any of the other options, despite delivering more development. It also generates the fewest delays in the areas which have most congestion in the first place (e.g. Southampton, Eastleigh town). It generates virtually no additional delays on Bishopstoke Road. In addition, whereas SGO B/C does generate a greater increase in traffic flows on the B-roads on the edge of the South Downs National Park, it generates (on average) virtually no increase on the quieter rural roads within the National Park, whereas the other options do generate some increases.

11.6 Overall it is considered that, compared to the other options, SGO B/C delivers clear benefits in terms of minimising further traffic congestion.

11.7 The transport model also provides more detail with respect to SGO B/C. It indicates that, in this scenario, the new Local Plan development will not generate severe congestion at the vast majority of junctions within the Borough, and that where severe congestion does occur it is usually only on parts of the junctions and often results in average total delays in the peak periods of less than 1 minute and never more than just over 2 minutes. It is important to remember that these are delays at individual junctions. In addition there is already congestion hot spots around the Borough and these will increase as a result of other growth. However it is considered that, given the scale of new development proposed, the scale of extra delays across the Borough generated specifically by the new Local Plan development, falls within the parameters of acceptability set out in national policy.

Countryside Gaps

11.8 National policy seeks that Local Plans reflect local circumstances and characteristics, that communities are empowered to shape their local areas, that a strong sense of place is created, and that development integrates into the natural environment. The Local Plan consultation and engagement exercises have revealed that one of the key priorities for local communities is to protect countryside gaps. South Hampshire and existing Council policy identifies the importance of countryside gaps to maintain the separation and distinct identity of towns and villages.

11.9 None of the SGOs are currently in a countryside gap and each is of a scale that the consequent need for gaps should be considered.

11.10 It is considered that options B/C or C (with appropriate layout and design) enable the creation of an appropriate countryside gap with Colden Common, Lower Upham and Horton Heath consistent with the scale of each community. Option D would create continuous development between Horton Heath and Bishopstoke. It is considered that if options D or E were selected a strong gap would be needed within the remaining area to separate the major urban area of Southampton / West End from Bishopstoke / Fair Oak / Horton Heath. Taking account of development already permitted in parts of option D and the strength of gap boundaries, it is considered that option E would be better

preserved as a gap[48]. Therefore it is considered that options B/C, C or D are better in terms of protecting the future countryside gaps needed.

Landscape

11.11 National policy seeks the protection of valued landscapes, commensurate with their national or local designation. The Council has analysed whether the SGO landscapes have a high, medium or low sensitivity to change. SGO B/C generally has a significantly higher area of land considered to be of high sensitivity, relative to SGOs C or E (in absolute and percentage terms, although the percentage difference with SGO E is less marked). SGO D has the least high sensitivity land of all the SGOs. It should be noted that none of the SGOs are designated for their landscape value and the majority of all of them are classed as having moderate or low sensitivity to change. However the conclusion is that in themselves, SGO D, followed by C and E have less potential for impact on sensitive landscapes. A Local Plan based on SGOs D or E will need development elsewhere in the countryside, for example in part of option C, which could affect some additional high sensitivity areas. This may reduce their benefits to some extent, although the most extensive high sensitivity area in option B would remain undeveloped. Options D, followed by C and then E are still considered to have less overall potential for impact than SGOs B/C. It should also be noted that the eastern extent of option C is relatively close to the boundary of the South Downs National Park. It is understood that this is unlikely to significantly affect views from the National Park.

Biodiversity

11.12 Regulations and policy promote the careful protection and enhancement of biodiversity designations, commensurate with their international, national or local designations. None of the SGOs involve the direct loss of a designated area. SGO B/C would include a link road which would use the existing and re-aligned Highbridge Road which crosses the River Itchen SAC at two points. The re-aligned road will include a replacement bridge across the River Itchen SAC (at a specific point where the SAC is confined to the river itself), and will also bring the road closer to the wider SAC covering the adjacent floodplain. Each SGO is close to various designations, and to varying degrees contain ecological networks important to those designations.

11.13 The following paragraphs set out in 'high level' terms for key issues how it is considered that each SGO could potentially have an effect prior to mitigation, and the potential to mitigate these effects. It is important to stress that this is not a part of the Habitat Regulations Assessment (HRA) itself and that the full HRA should be referred to for the specific Local Plan proposals and for more comprehensive detail.

[48] Recognising that any overall choice between D and E would need to take into account a wide range of other planning factors.

International Designations

11.14 Atlantic salmon / otters / (water vole): these species traverse the River Itchen and in some cases its tributaries. SGO B/C involves a new bridge (replacing an existing bridge) across the River Itchen. Each SGO includes tributaries. Safe and effective passage for these species is required. Mitigation measures are likely to include the appropriate design and construction of the bridges and (within development areas) buffers around tributaries.

11.15 Recreational Disturbance: SGO E followed by D has the potential for the most effect as they are closest to the Solent and the Itchen. A definitive mitigation strategy has been agreed for the Solent, and a working group established for the New Forest.

11.16 Other Disturbance (e.g. light spill): If development in SGOs D or E, or the SGO B/C link road were to generate the potential for light spill, careful lighting design would be required.

11.17 Hydrology: Each SGO contains a different mixture of headwaters and water courses. Mitigation measures are likely to include development buffers, sustainable drainage and bridge design.

11.18 Southern Damselfly: Following the precautionary principle, all options have the potential for an effect, although SGO B/C would probably have the potential for the greatest effect. The mitigation measures required are drawn from the conservation strategy which examines habitat enhancement and creation opportunities in and adjacent to the Borough.

National Designations

11.19 Woodland: SGOs B/C have the potential for a greater effect on woodland, in this case ancient woodland, the interlinking habitats, and the species they host. It is considered that mitigation can be put in place, including for example development free buffers and green infrastructure.

11.20 Great Crested Newts: SGO D has the potential to have the greatest effect. The Council is putting a mitigation strategy in place.

Overall

11.21 It is important to note that a Local Plan based on D or E will lead to development elsewhere in the countryside, potentially in part of C, so would also have the potential for some further potential effect on for example woodland; which to some extent could slightly narrow the relative advantages of SGOs D or E in respect of this issue.

11.22 The position regarding the relative potential for SGOs to have an effect is mixed. Each SGO is considered to have the potential for an effect without mitigation. The likely scale of that effect without mitigation may sometimes vary depending on the SGO and the issue being considered. It is considered that in general terms the HRA Screening Report supports the view that each SGO has the potential for an effect without mitigation.

11.23 The assessment of whether these potential effects can be mitigated appropriately in respect of the proposed submission Local Plan, in the terms set by regulation and policy, is set out in the evidence, in-particular through the habitat regulations assessment, which has been completed to a level sufficient to inform the Local Plan. In most cases further evidence or consideration of detailed measures will be required at the development management stages, and the Local Plan policies reflect this.

Other Environmental Issues

11.24 Most of the other environmental considerations will affect the detailed design or phasing of development rather than the overall merits of each location for development. However it should be noted that all options are affected by locally registered historic parks and gardens, option E has some higher quality agricultural land which would be permanently lost if developed; and for example options B/C need to be designed to avoid increasing the risk of flooding and to minimise new noise from the link road traffic. The Council is currently undertaking further air quality modelling.

SGOs: Conclusions

11.25 It is considered that SGOs B/C, C and D will do most to protect the countryside gaps needed (an important local policy with more generic support in national policy). Whilst, taken in the round, each SGO performs in similar or broadly similar ways across a range of transport / accessibility objectives (for different reasons), SGO B/C delivers clear benefits in terms of minimising additional congestion. Therefore in overall terms SGO B/C does most to meet transport objectives (an important local and national policy consideration). None of the SGOs affect nationally or locally designated landscapes. SGOs B/C will have most impact on non-designated landscapes with higher sensitivity to change, although it should be noted that the majority of its land is still classed as having moderate or low sensitivity to change. A Local Plan based on D or E will have some landscape impact on other areas of countryside too, for example within parts of option C. Each of the SGOs has the potential, without mitigation measures, to affect nearby ecology designations of international or national importance. The Habitat Regulations Assessment for the proposed submission Local Plan (including SGO B/C) concludes there will be no adverse effect on the integrity of international sites with mitigation measures incorporated.

11.26 Since the December version of this report, the transport modelling, habitat regulations assessment, infrastructure delivery plan and other evidence has been completed. The remaining evidence is now primarily focussed on a detailed assessment of M3 junction 12 and an assessment of air quality (e.g. in respect of air quality management areas). Engagement and consultation will continue until the Local Plan is submitted.

11.27 It is considered that in overall terms, on the range of evidence, that the key areas of difference between the SGOs are that SGO B/C has greater merit in

meeting transport / accessibility aims than SGOs C, D or E; greater merit in protecting countryside gaps than SGO E; and less merit than SGOs C, D and E in protecting more sensitive (although non-designated) landscapes. The comparative balance between different SGOs with regard to biodiversity is considered to be more mixed. However a full Habitats Regulation Assessment has been completed for the proposed Local Plan which, as explained above, states there will be no adverse effect on the integrity of international sites with mitigation measures incorporated.

11.28 It is considered that national and/or local policy gives some emphasis to transport/accessibility aims and designated countryside gaps, and less so to undesignated landscapes. On this basis it is considered that the greater benefits SGO B/C bring to meeting transport / accessibility and countryside gap aims outweigh the lesser merit it has in landscape terms.

11.29 It is important to emphasise that the relative weight to be given to completely different issues (transport / accessibility, countryside gaps and landscape sensitivity) also has an element of subjectivity to it. The Council report set this out, enabling the elected Council to carefully consider its views before reaching its decision.

www.eastleigh.gov.uk/localplan2016-2036

EASTLEIGH
BOROUGH COUNCIL