

# AUGMENTING THE EVIDENCE BASE FOR THE EXAMINATION IN PUBLIC OF THE SOUTH EAST PLAN



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## Summary and Conclusions

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## SUMMARY AND CONCLUSIONS

### The Task

- 1 This report was commissioned by ODPM and GOSE to provide independent technical advice for the forthcoming Examination in Public (EiP) of the Draft South East Plan (SEP). The brief for the work asked us to develop and appraise alternative options for accommodating housing and associated growth, additional to the amount proposed in the SEP, which was submitted to the Government on 31<sup>st</sup> March 2006.
- 2 We were not asked either to provide a critique of the SEP's approach to the distribution of housing nor of the Sustainability Appraisal prepared by ERM on behalf of the Regional Assembly.
- 3 We have put forward alternative levels for housing growth and scenarios for their distribution and undertaken a sustainability appraisal of these alternative options. The alternative levels of growth and spatial scenarios are for testing purposes and to provide the EiP with growth scenarios above and beyond those put forward in the SEP.
- 4 We were not asked, nor have provided, a preferred alternative strategy to that put forward in the SEP. Our approach has been to pose (and then address) the question; "what would be the impact if X or Y approach to growth was pursued"? Or more correctly, "what would be the relative impact of approach X or Y"?
- 5 Our work was supported by a steering group of officers from ODPM, GOSE, DfT and DEFRA but the methodology and conclusions drawn from the work are our own.

### Main Stages in the Study

#### *Stage 1 - Growth Options*

- 6 The Government has signalled, in its response to Kate Barker's Review of Housing Supply<sup>1</sup> that achieving the aim of affordability will require housing supply to be more responsive to demand and that the pace of house building across the country will need to increase to over 200,000 dwellings per annum over the next decade.
- 7 We did not base our growth options on the Government's response to the Kate Barker report (they were identified using data already available in the Region) but it is in this context that our testing approach and sustainability analysis needs to be set.
- 8 Two alternative approaches to forecasting growth were taken, the first based upon increases in household numbers (the demographic approach) and the other broad approach based upon providing sufficient dwellings to meet the demand for labour (the economic based approach). We derived data for the forecasts from published information, including work undertaken for the Assembly and interim household projections published by ODPM.
- 9 Our demographic based forecasts were based upon long term and short term migration patterns and included an additional allowance to help address the current backlog of housing need. The rationale for the economic led forecast started from the perspective of maximising economic growth and then calculating the number of

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<sup>1</sup> The Government's Response to Kate Barker's Review of Housing Supply, HM Treasury and ODPM, December 2005

dwellings that would be required to support that level of growth. In summary, the alternative growth scenarios we developed were:

- 33,000 dwellings per annum(dpa)(demographically based ) - 4,100 dpa above the SEP dwelling figure
- 37,000 dpa (demographically based) - 8,100 dpa above the SEP dwelling figure
- 46,000 dpa (economic based) - 17,100 dwellings above the SEP dwelling figure.

10 Since we identified our alternative growth levels (at the beginning of 2006) the Government has published its projection of households to 2026<sup>2</sup>. For the South East region they show an annual average change (2006 to 2026) of about 37,000 households (of which about 70% is one person households). Whilst we recognise that demographic forecasts are only one element to take into account in preparing an RSS, we note the similarity between these projections and our higher demographic option<sup>3</sup>.

### *Stage 2 - Alternative Spatial Distributions*

11 We did not revisit the spatial distribution for the 28,900 dwellings put forward by the Assembly in the SEP, which we recognise was arrived at after a great deal of consideration, taking account of demographic, economic and spatial factors. Nothing in our work undermines this distribution and we used it as the baseline upon which our additional housing allocations were made.

12 Our alternative distribution scenarios based on the two demographic-based forecasts considered:

- Pro rata increases in line with the distribution put forward in the SEP;
- For the higher growth option (+8,100), additional dwellings concentrated on the Region's Functional Urban Areas.
- The employment led growth scenario distributes housing growth in line with the projected economic growth.

13 We also considered how the +8,100 growth option would perform in terms of the location of dwellings if distributed in line with the employment led growth scenario. This provided some useful numeric comparisons with the other options but was not taken any further forward and was not subject to the sustainability appraisal(SA).

14 We therefore produced 5 alternative growth options:

- Plus 4,100 dpa - pro rata (Option A)
- Plus 8,100 dpa - pro rata (Option B)
- Plus 8,100 dpa - by Functional Urban Areas (FUR) (Option C)
- Plus 8,100 dpa - by employment led forecasts (not subject to SA)
- Plus 17,100 dpa - by employment led forecasts (Option D)

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<sup>2</sup> ODPM Statistical Release 14 March 2006

<sup>3</sup> Our +8,000 option includes an element for tackling the Region's housing backlog. We also note that households do not automatically translate into an equivalent demand for housing - some allowance needs to be made for vacancies.

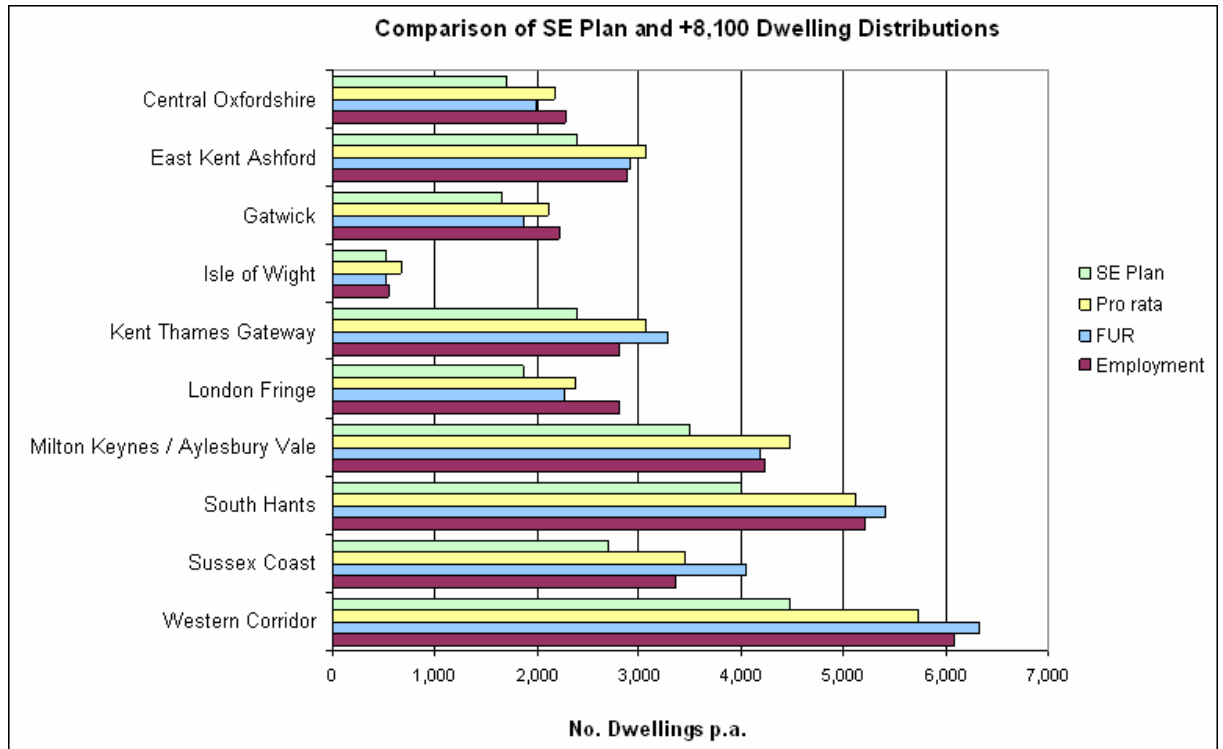
- 15 In all options (at sub-regional and local authority level) growth is in excess<sup>4</sup> of that under the SEP.
- 16 The distribution of dwellings derived under the five scenarios produces different patterns of dwelling distribution. The higher the additional number of dwellings under the scenario, the greater the number of additional dwellings for each sub region. In all cases, the major 'gains' of dwellings are found in the South Hampshire and Western Corridor sub regions (which is also the case for the SEP). The largest single increase is found under the +17,100 employment led scenario for the Western Corridor (at 7,864 dpa). However, at county level, it is Hampshire and Kent which show the greatest increases for all the scenarios (which is also the case for the SEP).
- 17 Comparison between the three different options at, for example, +8,100 dpa level produces some significant differences at sub regional level. For instance:
- Under the FUR distribution, Kent Thames Gateway 'gains' 3,285 dwellings per annum compared with 2,813 under the employment based distribution;
  - Under the employment based distribution, Sussex Coast 'gains' 3,369 dwellings per annum compared with 4,045 under the FUR distribution;
  - Under the FUR distribution the Rest of Hampshire 'gains' 886 dwellings per annum compared with 1,024 under the pro rata distribution.

### *Stage 3 - Requirement for Additional Land*

- 18 There is already capacity on previously developed land (including buildings) in the South East to accommodate a proportion of the growth depicted under each of our scenarios and we estimated this using the best information currently available. We then assumed that the balance of additional dwellings would be provided on greenfield urban extensions.
- 19 A high proportion of the identified existing capacity is on previously developed land. It is reasonable to assume that not all the development capacity to 2026 on previously used land is identified today and further previously developed land will come forward over the course of the Plan period. Therefore our estimates of greenfield land required for those dwellings not catered for through existing capacity will tend to be an over-estimate.

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<sup>4</sup> In one case, the additional dwellings are no greater than those put forward under the draft South East Plan (Isle of Wight - Plus 8,100 - by Functional Urban Areas).



- 20 In considering the land requirements to accommodate the dwellings which cannot be met through the existing capacity, we have made estimates based upon a main net density forecast of 40 dwellings per hectare (dph) and also for comparison purposes 50 net dph. We have grossed these densities up to allow for roads, open space, sports pitches etc, in accordance with ODPM guidelines to 20 and 25dph per gross hectare respectively<sup>5</sup>. If the higher densities are achieved, the amount of land required would be reduced. However, is it difficult to predict how densities will turn out over the next 20 years and the balance to be struck between dwellings for small households and larger family accommodation.
- 21 Our approach relies on additional development being accommodated in greenfield extensions to urban settlements. An alternative approach might be to consider the development of new settlement(s). We have concluded that, on its own, a 'new settlements strategy' is unlikely in practice to deliver the additional dwelling requirements being tested within the Plan period. It would be possible to bring forward some smaller new settlements (of, say, 4,000 to 8,000 dwellings) before 2026 but their contribution to the Region's total housing requirement would be limited and the relative sustainability merits of such developments over urban extensions would have to be carefully considered. To achieve new settlements (or new towns) of a significant size, which created new 'self-contained' urban centres and which delivered significant levels of growth, would require considerable lead-in times and they would be unlikely to make a significant contribution to the Region's housing requirements before 2026, although it might be possible to achieve

<sup>5</sup> The Draft SEP has a figure of 40 dwellings per hectare for net residential development. We have assumed that development associated with housing (e.g. infrastructure, employment, community facilities) will result in twice as much landtake overall as that required by housing alone (giving an overall density of 20 dwellings per hectare). This is at the conservative end of the grossing up factors recommended by the ODPM.

completions after 2016 if a determined approach to new town development was adopted.

- 22 If large new settlements are to be considered as a realistic option to meet (some part of the Region's) housing requirements in the future (and beyond 2026) they need to be tested early on in the regional planning process. We believe that a proper review of the 'new settlement option' needs to be undertaken well in advance of the first review of the SEP so that this alternative is truly capable of being 'tested' alongside other options for the future.

### Implications of Spatial Options for % Development on Previously Developed Land

- 23 Our estimates of the 'dwelling requirements' and greenfield land take themselves have important implications.
- 24 Recent figures for the Region <sup>6</sup> for 2004/2005 show that overall, 76% of all dwellings were constructed on previously developed land but with significant sub regional variations. The SEP seeks to achieve 60% of all development on brownfield land over the plan period on current assumptions with regard to future development location and densities. For all the options we have tested the brownfield proportion is likely to be lower and reduces to around 40% on the plus 17,100 employment led option. These proportions would increase if more urban capacity is identified and/or higher development densities were achieved.
- 25 At the sub-regional level the picture varies. In the higher growth options, some sub regions still achieve over 60% development on brownfield land. For example, even at the +8,100 dwellings per year, Central Oxfordshire, Kent Thames Gateway and the London Fringe can still meet the 60% brownfield development target.
- 26 A higher proportion of brownfield development could be achieved if we had set out to focus development where most known urban capacity is available. We rejected a capacity led approach to scenario development on the basis that capacity should not, on its own, dictate spatial planning, although a balance between housing need and land availability has to be struck.

### Constraints and Potential Impacts

- 27 We examined a number of different impacts of our options. Two points need to be borne in mind before we describe these impacts. First, a distinction has to be made between those impacts which are dependent on population growth and those dependent on household change. Many environmental impacts are driven primarily by population growth in the Region, regardless of the supply of housing. Nevertheless we also note that some impacts will vary depending on the type and distribution of development achieved and are not just affected by the scale of the development achieved. Second, that the levels of growth envisaged in the SEP will also be impacting upon the environment and will require substantial infrastructure investment and mitigation and what we are examining here are the additional impacts of each of our four main options (A-D).

#### *Construction and use of aggregates*

- 28 The relationship between construction waste and the demand for aggregates and our scenarios is a simple one - the more dwellings provided, the greater the amount of construction waste and the higher the need for aggregates.

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<sup>6</sup> Regional Monitoring Report 2005, SEERA

- 29 However, this finding has to be set against the national picture. If dwellings are not provided in the South East, will they be required somewhere else in the country such that the total national amount of construction waste and aggregate use will be the same? It is also important to consider the sustainability implications of increased aggregate demand in the context of where aggregates are likely to be sourced. Additional housing will reduce the regional land bank for sand and gravel which may compromise regional self-sufficiency over time.
- 30 However viewed, the need for more sustainable design and construction methods is apparent in order to minimise the impacts of higher housing requirements in the Region. This should include consideration of the extent to which the Region can be self-sufficient in its use, re-use and recycling of aggregates so as to minimise impacts such as transport emissions.

### *Construction and domestic waste generation*

- 31 These wastes increase with the higher levels of dwelling requirements under our scenarios but again, waste generated under our different scenarios has to be set in a national context (the South East takes a 'share' of a fixed national amount of waste which varies depending on the proportion of the country's housing provided in the Region).
- 32 The key issue in the South East is the extent to which it has the capacity to dispose of waste that cannot (or is not) recovered or recycled and financial penalties which will result should Landfill Directive targets not be met. This in turn is dependent upon waste reduction in the first instance, provision of new recycling and recovery infrastructure and the capacity of landfill sites in the Region to cater for the remainder.

### *Carbon Dioxide Emissions*

- 33 We concluded that our housing scenarios show an 8-12% increase in regional domestic CO<sub>2</sub> emissions as a result of domestic energy consumption. The SEP allocation is likely to lead to an 8% increase in regional domestic CO<sub>2</sub> emissions and the highest housing option is likely to lead to a 12% increase. In addition, similar levels of CO<sub>2</sub> are likely to be generated through the construction of materials for housing development.
- 34 The figures do not take account of CO<sub>2</sub> likely to be generated from car use associated with increased housing, or industrial processes from economic uses. Both transport and industry are likely to increase CO<sub>2</sub> emissions considerably, given that together they made up two thirds of CO<sub>2</sub> emissions in 2003.
- 35 Unless higher standards of energy efficiency can be implemented in all new housing development, the construction and occupation of housing development is likely to contribute to increased CO<sub>2</sub> emissions and its consequent effects. Again, this is a national priority rather than one that is restricted to the South East. The percentage increases outlined above do not take into account the impact of the new Part L of the Building Regulations which are likely to reduce emissions by 20%<sup>7</sup>. If such measures can be implemented in all new housing development, the increase in CO<sub>2</sub> emissions is likely to be mitigated to a certain extent.

### *Trunk Road Stress*

- 36 Limited data is available on the potential transport impacts of growth but we have made use of existing trunk road stress models to assess the possible impacts of higher levels of growth. The modelling exercise shows that even with the SEP

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<sup>7</sup> L1A, Conservation of Fuel and Power in New Dwellings. Section 1: Design standards.

levels of growth, a number of trunk roads are likely to be unable to cope with the predicted traffic demand.

37 The degree and extent of traffic flows exceeding trunk road capacity increases progressively with higher housing growth and at the +17,100 housing option, only the trunk roads serving the East Kent/Ashford sub region and the A5 at Milton Keynes appear to remain below capacity. It should also be noted that many junctions are already at capacity or are overloaded and are likely to be a restraining factor well before the link roads reach capacity. However it should be borne in mind that this modelling does not include any improvements that might be initiated in the later part of the plan period.

38 We then compared the locations where the road network is under particular stress with 'Group 1' environmental constraints i.e. constraints which are of national or international importance e.g. AONBs, SSSIs. We put this forward as a very simple 'test' of whether improvements to the road network would be easy or difficult to achieve in terms of their environmental impact. This is a very basic measure - there will be locations which lie outside Group 1 constraints where environmental considerations will be critical and routes within Group 1 constraints where an acceptable highway solution can be found. The analysis takes no account of cost.

39 Using this very simple test, we found for the sub regions that:

- In East Kent/Ashford, Central Oxford, Kent Thames Gateway, Milton Keynes and Aylesbury Vale, South Hampshire and the Western Corridor, trunk road widening to relieve stress would not automatically be inhibited by Group 1 constraints;
- In the Sussex Coast and in the London Fringe, widening trunk roads would almost certainly conflict with Group 1 constraints.

40 The capacity of the highway network is a serious issue for the Region and has significant implications for its future growth and for the investment needed to accompany growth plans.

41 In some sub regions, our analysis suggests that there are significant environmental constraints to major highway improvements but generally across the Region, the way in which development is planned at the sub regional and local level will have an important bearing to the Region becoming more sustainable. Rather than solely aiming to provide additional road and rail infrastructure to tackle transport problems the most sustainable overall strategy is one which seeks to reduce movements in the first instance, particularly those associated with travel to work, in favour of more localised live-work patterns.

### *Rail Transport Capacity*

42 There is some over- loading on most routes into London and all sub regions adjoining London would therefore likely be under stress under the higher growth forecasts. Outside London most of the lines are operating well below their existing capacity except for the Brighton line, and to a lesser extent the Southampton to Basingstoke section. If these lines are already nearing capacity, then higher growth rates are likely to lead to serious capacity problems. It should be borne in mind that, although some lines appear to have capacity further away from London, people joining such lines to commute into London are contributing to the capacity problem further down the line.

43 Again the implications of this are that higher growth levels for the Region will need to go hand-in-hand with appropriate investment to address rail 'bottlenecks'. Alternatively, the tendency for increased commuting to London from longer and longer distances should aim to be reversed.

### *Water Resources*

- 44 By 2026, if no further demand and supply measures are put in place other than those planned by 2009/10, increasing the provision of housing under all our scenarios will result in a regional deficit in water supply, with many areas in severe deficit of water resources, although some areas will still have a surplus.
- 45 The higher the levels of growth, the greater the deficit. However, for growth levels at +4,100 and +8,100 it appears that with the implementation of appropriate supply/demand measures, the increased housing numbers can be accommodated in the Region. However, this will be dependent on achieving efficiency savings of between 8 and 21% and a number of water supply schemes beyond those already planned by 2009/10. With growth at +17,100 dwellings (the highest levels we tested) significant further savings and supply measures will be needed<sup>8</sup>. It should be noted, however, that Policy NRM2 of the SEP recognises that a number of strategic new water source options may be required over and above 2009/10.

### *Water Quality*

- 46 Additional housing growth in the South East has the potential to have significant negative effects on water quality in a number of sub regions.
- 47 The Environment Agency has produced a report on water quality in the South East which highlights sewage treatment works (STW) which are limited in capacity.<sup>9</sup> There are a total of 523 STWs in the South East, of which 63 are considered vulnerable by the Environment Agency. Of these, 30 could accommodate the housing numbers outlined with the imposition of stricter discharge consents and there are 24 STWs in 6 sub regions where housing growth should be limited. If housing growth above the limits identified by the Environment Agency were to occur in the locality of these STWs, water quality would potentially be adversely affected. However, the water regulatory framework means that in reality water quality must be maintained. The Environment Agency has identified one STW which has already reached capacity and cannot accommodate any additional growth. The remaining 8 STWs require further study.
- 48 Although the Environment Agency advises that it may be possible to route a proportion of the sewage from housing that would be located in the catchment area of the 63 vulnerable STWs to alternative non-vulnerable STWs, it is likely that the Environment Agency will still need to examine alternative discharge options on a site by site basis.
- 49 Existing STW capacity in the South East is limited in terms of accommodating the growth outlined in the SEP. Therefore, it is likely that the higher housing options will lead to capacity being reached much more quickly, with resulting significant negative effects on water quality if no further measures to increase STW capacity in the Region are taken. However, until further modelling is carried out, it is not possible to conclude whether it will be possible to overcome the negative effects of providing additional housing on water quality.
- 50 Additionally, increasing the provision of housing in the South East is expected to lead to indirect negative impacts on water quality, for example, increased diffuse pollution from road run-off.

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<sup>8</sup> Conclusions for plus 4,100 and plus 8,100 options are based on previous work undertaken by the Environment Agency; conclusions on the plus 17,000 option are based on modelling work directly carried out for this scenario.

<sup>9</sup> Creating a better place - Planning for water quality and growth in the South East. 2006. Version 10.

### *Implications of Greenfield Land Requirements*

- 51 The Sustainability Appraisal (SA) identifies a number of sub-regions where development could conflict with important constraints e.g. flooding, environmental designations. What the SA cannot say is if these constraints mean that the sub-region cannot accommodate a particular level of growth or whether there are sufficient areas of unconstrained land which could be used to meet the level of growth depicted in a particular scenario. To address this central issue we have prepared a land take model for the Region, which in effect measures “capacity for urban extensions”. The model is based on a number of simple assumptions and is not intended to say that such and such an area **can** accommodate X level of growth when considered in detail (for example, there may be locally valued assets and sensitive landscapes that may preclude development, even though they are not subject to designations). The purpose of the exercise was to address the basic question "Is sub region X so constrained that it is not realistic even to consider the levels of growth depicted under different scenarios?"
- 52 The model shows how tightly environmental and planning designations and natural resources surround the potential growth centres in the sub regions. This is noticeable not just in the more obvious areas, such as the London Fringe, Gatwick and the Sussex Coast but also the Kent Thames Gateway and Central Oxfordshire.
- 53 There appears to be no noticeable difference between the effect on unconstrained land resources between the sub regions and the “rest of counties”. Overall the potential urban growth areas are generally as constrained by environmental, planning and resource designations as are the more rural areas.

### *The Sustainability Appraisal and its Implications*

- 54 Higher levels of growth across the South East (assuming that sustainable principles are adopted for its planning) will tend to provide more affordable housing, address affordability concerns, stimulate greater economic growth and provide a better range of facilities for the Region. Positive effects on regeneration are more likely in the Sussex Coast, Kent Thames Gateway and South Hampshire.
- 55 On the other hand, higher growth will also result in higher CO2 emissions, traffic, waste, water demand and demand for aggregates. For some of these, such as CO2 emissions, it can be argued that the implications for the Region have to be set within a national picture - if the growth does not occur in the South East, some of it may well have to be accommodated elsewhere in the country. However it is difficult to assess what proportion of this additional demand might be “pushed” into other regions and what might be met by the existing housing stock in the South East being used more intensively.
- 56 For the other factors, however, there is a more specific South East dimension. With higher levels of growth there are issues of potential conflicts with environmental and planning constraints, particularly:
- Green Belt constraints in the London Fringe and Central Oxfordshire;
  - Water resources in Central Oxfordshire, Kent Thames Gateway, parts of West Sussex and South Hampshire;
  - Water quality in South Hampshire, East Kent/Ashford, Gatwick, the London Fringe, the Sussex Coast and the Western Corridor and Blackwater Valley;
  - Flood risk in South Hampshire, Sussex Coast, Central Oxfordshire and the Kent Thames Gateway;
  - Biodiversity particularly in the Western Corridor and London Fringe (for example with respect to the internationally designated Thames Basin Heaths).

- There are also capacity issues with respect to waste management and the road and rail networks in the Region. Dealing with such issues will be as much about reducing demand on the infrastructure than it will be about investment in new infrastructure. For example, reducing waste in the first place will help to reduce the need for new waste management infrastructure. Similarly, reducing not only the need to travel by car, but also the desire (e.g. by achieving a better alignment between homes and jobs, radically improving walking, cycling and public transport, and introducing significant disincentives to car use), would help to take some of the pressure off the road network.
- 57 Drawing together the detailed work of the SA and our review of 'capacity for urban extensions' and the Region's infrastructure, we have concluded that at a strategic level and within existing policy constraints, the sub regions have differing capacities to accommodate additional growth over the levels contained in the SEP. We summarise this as follows:
- Central Oxfordshire, Kent Thames Gateway, Milton Keynes and Aylesbury Vale, and South Hampshire offer the most potential for additional growth, although there could be issues relating to flood risk, water resource availability, and biodiversity in some or all of these areas;
  - East Kent/Ashford offers some potential for growth, although again there could be issues relating to flood risk, water resource availability, and biodiversity;
  - The Western Corridor offers limited potential for further growth, with the internationally designated Thames Basin Heaths acting as a potential constraint to development and also potential issues regarding designated landscapes, flood risk and water resource availability;
  - There appears to be the least potential to accommodate additional growth in Gatwick, the London Fringe and the Sussex Coast sub regions, due to a range of environmental and planning constraints.
- 58 The above is a high-level analysis and it needs to be recognised that some sub-regions where growth is considered 'feasible' may not be capable of taking the higher levels of growth set out in our scenarios when detailed local examination is undertaken. Similarly, where we have concluded that additional growth is more problematic, pressure to increase urban capacity, higher densities and more detailed local analysis could overcome the issues we have identified and higher levels of growth could be achieved.
- 59 Having reached these conclusions, we have not gone on to re-assess our spatial options and come forward with a single strategy for each growth level which could accommodate growth without running up against the capacity and environmental constraints we have identified. Neither have we reviewed the issue of deliverability - whether the planning system, the construction industry and public investment could keep pace with the growth levels depicted.
- 60 Growth in all the sub-regions will require significant investment - in transport and water resources in particular but also in other services such as health and education, which will need to keep pace with population growth.
- 61 There will also be the need for tougher criteria for delivery, both during dwelling construction and in managing the use of the environment (e.g. minimising CO2 emissions, dealing with waste, efficiency in the use of water). Sustainability is as much about how development is delivered as it is about where growth occurs.