

SOUTH EAST ENGLAND REGIONAL ASSEMBLY

Review of the Basis for the
National and Regional Guidelines for
Aggregates Provision 2005-2020
as Applied to South East England

by Green Balance

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Summary and Conclusions

S1 The key findings of this study are that:

- **South East aggregates sales have been consistently below those set in the *Guidelines* published in 2003 for the period 2001-2016;**
- **The tonnage of aggregates in planning applications has been below that required to sustain the amount set in the *Guidelines*;**
- **Estimates of permitted sand & gravel reserves in the ground were revised downwards by mineral companies by 23 million tonnes between 2001 and 2007: but for this, the amount provided for in planning permissions by MPAs would have been sufficient to satisfy the *Guidelines* regionally at all times;**
- **In the five MPAs which did not have a seven year landbank of permitted reserves (in accordance with the *Guidelines* at the end of 2007), there were 33mt of sand & gravel in sites allocated for working but not applied for by mineral companies;**
- **Mineral companies had mothballed operations at sites containing 10mt of permitted reserves (prior to the economic downturn), and a selection of other sites had rates of working significantly below their operating capacity;**
- **Rock imports are declining - so the shortfall in sales from the South East against the *Guidelines* is not resulting in increasing imports from other regions;**
- **Substitution by alternative materials is occurring but has little impact on the other conclusions;**
- **Demand has never been as high as anticipated in the *Guidelines* (2003).**

S2 The Department for Communities and Local Government (CLG) consulted during 2008 on proposals to review the *Guidelines for Aggregates Provision in England*, last issued in June 2003. This specifies the quantity and distribution between the regions of the obligation to provide for construction aggregates supply through the planning system. The proposals include reducing the allocation to the South East region from 13.25 million tonnes per annum to 12.18mtpa in the years to 2020. Sales in the region have in recent years been well below the *Guidelines* allocation, and the Assembly consider that the regional allocation should be further reduced to 9.01mtpa. This study has been commissioned to evaluate the issues involved. The central question is whether CLG's existing and proposed *Guidelines* allocations are too high or the level of provision too low.

S3 The South East is not alone in facing *Guidelines* figures higher than actual sales: this has applied to all regions every year since 2001. The South East and South West have persistently fallen furthest short of their 2003 *Guidelines* allocations, and only the East Midlands has had sales within 15% of its allocation each year since 2001.

S4 *Guideline* allocations to each region are apportioned to each Mineral Planning Authority (MPA). Each MPA is then expected to plan, in an appropriate level of detail, for where extraction can take place to supply aggregates for its plan period

in line with its apportionment, including identifying this on a map. However, the process of plan preparation has been held up by the replacement of Local Plans under previous legislation with Development Plan Documents required by the Planning and Compulsory Purchase Act 2004. Principally for this reason new allocations for aggregates supply have in many areas of the South East not been brought forward as quickly as expected. Regulations have recently been amended to require the new Plans to last for at least 15 years from their date of adoption (i.e. 2024 or later): hardly any MPAs in the South East already have adopted plans which allocate sufficient aggregates sites to last that long.

- S5 In these circumstance and as a matter of policy, the Government expects MPAs to maintain a ‘landbank’ of permitted reserves sufficient to meet anticipated obligations to supply aggregates. The landbank which each MPA is expected to sustain should be sufficient for at least seven years’ working of sand & gravel, or at least ten years’ working of crushed rock at the rate apportioned to it. The South East England Regional Aggregates Working Party Annual Monitoring Report 2007 shows that permitted reserves for sand & gravel stood at 78.133 million tonnes at 31st December 2007, equivalent to a regional landbank of 5.9 years at the *Guidelines* rate.
- S6 Reserves of aggregates are industry estimates of the quantity of workable mineral in sites which have planning permission for extraction. This information is supplied on an annual basis to SEERAWP for its Monitoring Report. Reports show that at all times in the South East region there were ample reserves of crushed rock (at least twice the *Guidelines* figure of 21.9 million tonnes [10 years at 2.19mtpa]). In contrast, the landbank of reserves for sand & gravel dropped below 92.75 million tonnes (7 years at 13.25mtpa) in 2004 and remained below it thereafter. (The landbank would have dropped below this threshold two years later, in 2006, if every individual planning application for sand and gravel since 2001 had been approved.)
- S7 However, a critical influence was that companies reassessed their reserves as time passed. This study found that this made a significant difference to the reserves that would have been expected by adding the permissions granted to the previous year’s estimate of reserves and subtracting the sales from them. In relation to sales of sand & gravel, taking 31.12.00 as a starting point, permissions were in theory sufficient to sustain reserves distinctly above the 92.75mt target throughout the period 2001-2007. However, this was not the case in practice due to significant net downward revisions of estimates of reserves by 23mt by mineral companies (equivalent to 2-3 years’ production over the seven years). For crushed rock, in contrast, reserves at the end of 2007 were 9mt greater than would have been expected by applying the cumulative sales and permissions information to the reserves at the end of 2000.
- S8 The region as a whole is failing to satisfy the policy to provide a landbank of at least seven years’ against the *Guidelines* figures, though the landbanks of each MPA in the region vary. At the end of 2007, the following areas had sand & gravel landbanks in excess of seven years: Buckinghamshire, East Sussex, Isle of Wight, Kent, Medway, Milton Keynes. If the data are updated to the end of 2008,

taking into account new planning permissions and sales during the year, the Berkshire Unitaries also satisfied the policy.

- S9 In the authorities with landbanks less than seven years, there have been available for many years' allocations of sites in adopted plans which have not been brought forward by mineral companies. MPAs estimate that there currently remain over 33mt of workable reserves in allocated sites but without planning permission in the five areas which did not have seven-year landbanks at the end of 2007. This suggests that there has not been great urgency to obtain further sand & gravel supplies even in the areas with the lowest landbanks. If the allocated sites containing these reserves had been brought forward and then permitted, the landbanks in these authorities would now be distinctly higher. Those in Berkshire, Surrey and West Sussex would exceed seven years. Only in Oxfordshire and Hampshire, therefore, could a shortage of allocated sites possibly be claimed to have inhibited mineral companies from sustaining appropriate landbanks. Their Local Plans date from 1996 and 1998 respectively and have expired, and in both cases preparation of new Development Plan Documents is required forthwith.
- S10 Sales of aggregates in the South East region lag below the amounts in the *Guidelines* for which provision should be made. This may be because insufficient planning permissions (in tonnage of aggregates) have been issued to facilitate this quantity of extraction. Major shortfalls in planning permissions were identified between 2001 and 2007. For sand & gravel, permissions granted totalled 35.17mt, representing only 38% of the total permissions needed to satisfy the *Guidelines* (92.75mt) without reducing the level of permitted reserves (62% shortfall). For crushed rock, permissions granted totalled 8.38mt, representing only 55% of the total permissions needed to satisfy the *Guidelines* (15.33mt) without reducing the level of permitted reserves (45% shortfall).
- S11 The principal reason for the insufficiency of permissions was found to be that not enough planning applications were submitted by mineral companies. Even if all applications submitted had been permitted, the shortfalls would still have been 45% for sand & gravel and 8% for crushed rock. The insufficiency of applications suggests that there has been no great urgency on the part of mineral companies to obtain substantially more planning permissions. The possibility remains open that permissions on a scale sufficient to allow production at the rate set out in the *Guidelines* are not required: the *Guidelines* could be too high, rather than the actual level of output and the planning permissions to support this both being too low.
- S12 The success rates of planning applications by tonnage were lower in the South East than in England as a whole in 2001-07: 69% for sand & gravel (England = 79%) and 60% for crushed rock (England = 95%). The impact of the Secretary of State's decisions, on appeal against refusals by MPAs, shows that the Secretary of State largely reinforced the decisions taken by MPAs in respect of sand & gravel (who approved under 3% of all sand & gravel applications by tonnage). This suggests that MPAs cannot for the most part be held to have unadvisedly withheld planning permissions for sand & gravel working. However, the same conclusion cannot be drawn for the less critical material of crushed rock, (where the Secretary

of State approved 39% of all crushed rock applications by tonnage): two significant permissions on appeal in Oxfordshire had a large proportionate impact on the regional figures. Such urgency as there may be for mineral companies to obtain further planning permissions to sustain sand & gravel output in the South East is not reflected in the quantity of planning applications that might have been expected.

- S13 The study considered the opportunities for mineral companies to invest in aggregates output in the South East region by means other than new planning permissions. Mineral Planning Authorities identified about 10mt of reserves at sites which were mothballed (or virtually so) prior to the economic downturn, whether or not they had previously been worked, but contained significant reserves. There were further significant reserves and allocations on Romney Marsh (Kent and East Sussex) some of which would not be needed until well beyond 2025. At least four further sites were identified in different parts of the region capable of greatly increasing their production on a sustainable basis without any further authorisations. Mineral companies have available to them opportunities to increase production from a selection of sites already permitted but which are inactive or under-used. Evidence was found of two sites with older permissions which were being brought into use, but many more remain. This too suggests that the urgency of providing new permissions can be overstated.
- S14 In view of the indications of weak pressure for additional land supply for aggregates working in the region, the study considered possible explanations for the observed pattern of supply and demand. The shortfall in relation to the *Guidelines* figures might have been caused by (or had knock-on effects on) contributions to regional consumption by other types of material or imported materials. The study found that there is no evidence at the regional level to suggest a worsening problem of mineral supply from South East sources in relation to demand between 2001 and 2005, the two years when comparison is practicable. The reverse is indicated: crushed rock imports declined by nearly 6mt between the two years, and net exports of land-won sand & gravel increased by 2mt. Rather than South East aggregates sales being held back by a shortage in supply compared with the *Guidelines*, the pattern of supply reflects a declining demand while the proportionate contribution from South East primary aggregates sales increased in the period 2001-2005. The shortfall in aggregates provision in the South East, arising principally from a geological dearth of crushed rock, is therefore having a declining rather than an increasing impact on regions which export to the South East. This suggests that the *Guidelines* allocation to the South East could be reduced (to reflect the market more accurately) without causing other regions to increase their supplies into the South East or adversely affecting the construction industry.
- S15 The use of alternative aggregates (i.e. other than primary land-won and marine dredged aggregates) in the South East rose in 2005 to the national average: these should therefore not be assumed to be having any special regional impact on the pattern of supply and demand. The impact of the change in the use of alternative materials in the South East between 2001 and 2005 was modest in numerical

terms, though much more pronounced proportionately in a declining overall market.

S16 The overall pattern of imports into the region over the years is complex. Over the years to 2001 there was a small but clear decline in the proportion of South East consumption supplied by local material (whether land-won or marine-dredged). Imports have made up the difference, especially crushed rock. One possible cause of this might be that there has been increasing difficulty in obtaining the mineral needed from within the South East, so imports have been drawn in. However, the detailed information on imports and exports tends not to support this proposition:

- the greater proportionate importance of crushed rock imports arose mainly because overall demand was dropping faster than the rate at which crushed rock was imported;
- exports from the South East have increased, especially between 2001 and 2005, suggesting that the issue was not so much the availability of primary aggregates locally but where they were used;
- because the tonnage of imports dropped sharply between 2001 and 2005, and net imports still more so, the implication is of a diminishing rather than an increasing problem of local supply (if there is a problem at all).

S17 Crushed rock has progressively substituted for sand & gravel over the years, in the South East and elsewhere. In view of the limited availability of crushed rock in the South East, this substitution alone appears to account for some of the imports into the region. The South East (along with London and the East of England) continues to use a substantially higher proportion of sand & gravel, rather than crushed rock, compared with other regions of England, so the scope for substitution remains higher in the greater South East than elsewhere. The substitution trend towards crushed rock largely ceased in the rest of England by 1989, but continued in the greater South East. Here the rate of substitution of crushed rock for sand & gravel has been faster than elsewhere in England. The impact of substitution has been difficult to identify against a background of rapidly declining demand in the South East since 1989, and particularly between 2001 and 2005. Data combined on aggregates by source, end use and destination is not available to unravel the complexities of the supply pattern.

S18 All the indications at the regional level suggest that the pattern of aggregates supply largely reflects demand and that production and continuity of supply of land-won primary aggregates have not been unduly hampered by the operation of the land use planning system. The regional apportionment to the South East in the Government's *Guidelines* is undoubtedly too high in relation to actual demand rather than the output of locally-produced aggregates too low.

1 Introduction

(i) *Background*

1.1 The Department for Communities and Local Government (CLG) consulted during 2008 on proposals to review the quantity and distribution between the regions of the obligation to provide for construction aggregates supply through the planning system. Policy on this is set out in *Guidelines for Aggregates Provision in England*, last issued in June 2003. Established practice allocates to each region a requirement (in millions of tonnes [mt]) for land-won aggregates over a period of years, divided between sand & gravel and crushed rock. Each region then apportions the allocations for each material between its constituent Mineral Planning Authorities (MPAs) as it sees fit.

1.2 The South East England Regional Assembly (the Assembly) in its response to the consultation (18th June 2008) noted that, within the area currently comprising the South East region, annual sales of sand & gravel had declined from 12.9mt in 1997 to 8.8mt in 2006, representing a decline of 32%. Meanwhile, the 2006 sales of 8.8mt were 34% less than the annual equivalent allocation to the region in the 2003 *Guidelines* of 13.25mt of sand & gravel (212mt over 16 years 2001-2016). The draft allocation to the South East region in the CLG consultation earlier in 2008 was for 195mt of sand & gravel over 16 years 2005-2020 (equivalent to 12.18mtpa), representing a reduction from the 2003 *Guidelines* figure of 8%. The Assembly considered that this reduction was insufficient and that the revised allocation to the region should be further reviewed downwards. The Assembly asked for a reduction of about 32% on the 2003 *Guidelines* figure for sand & gravel. This is equivalent to 9.01mtpa.

(ii) *Purpose of this study*

1.3 The Assembly is concerned that there has been insufficient scrutiny of the basis for the proposed aggregates allocation to the South East region in the draft of the forthcoming *Guidelines*. In view of the prima facie case for a lower allocation to the region, for reasons set out in the 'Background' above, the current study has been commissioned to undertake a review of the figures emerging in the government's draft *National and Regional Guidelines for Aggregates Provision 2005-2020* that were issued for consultation in April 2008. The review is required to assess the basis for the figures generated for the South East and their robustness and validity. It must examine potential reasons for sales of aggregates in the South East and other regions consistently and historically being below the *Guidelines* figures. This work is intended to inform the debate anticipated when a review of the minerals policies of the South East Plan is considered at an Examination-in-Public expected in 2009.

1.4 Matters which the Assembly particularly wish to be studied are:

- i) a review of the model used by CLG and set out in the consultation on the draft *Guidelines*, especially the relationship between input data on sales and the output *Guidelines* figures;

- ii) an overview of sales data compared to *Guidelines* figures in the South East since 2001 and in comparison with other regions where necessary;
- iii) consideration of possible reasons for sales trends and mismatch/under-shooting including:
 - a. Provision in development plans
 - b. Granting of planning permissions
 - c. Investment by minerals companies
 - d. Actual demand and possible reasons for this
 - e. Import from other regions, and substitution of land won sand and gravel by marine won aggregates and imports of crushed rock
 - f. Revisions to estimates of reserves undertaken by minerals companies.

Conclusions are required on a realistic and justifiable basis.

(iii) ***Scope of the study***

Regional boundaries

1.5 The South East England Regional Assembly became Regional Planning Body in April 2001, covering an area which mirrored that of the Government Office for the South East. Previously, the administrative South East had comprised a larger area, but London established its own Regional Planning Body, and the areas of Bedfordshire, Hertfordshire and Essex joined the former East Anglia region to form the East of England region. As a result, collated data for the 'South East' is for the most part only readily available from 2001 onwards and can be difficult to compare with earlier years. It should also be noted that in the reorganisation of regional planning, Cumbria moved from the former Northern Region to the North West, with the residual area renamed the North East region. Inter-regional comparisons have therefore been affected either side of 2001. For reliable comparisons over many years, the current regions of South East, East and London must be combined as must North West and North East.

Analysis at regional level

1.6 Most of the analysis in this study evaluates the impact of the *Guidelines* at the regional level only. The sub regional apportionments to individual MPAs within the region has not been evaluated. However, for some detailed topics, where understanding the regional position depends upon building up information from constituent MPAs, sub regional data has been obtained and collated.

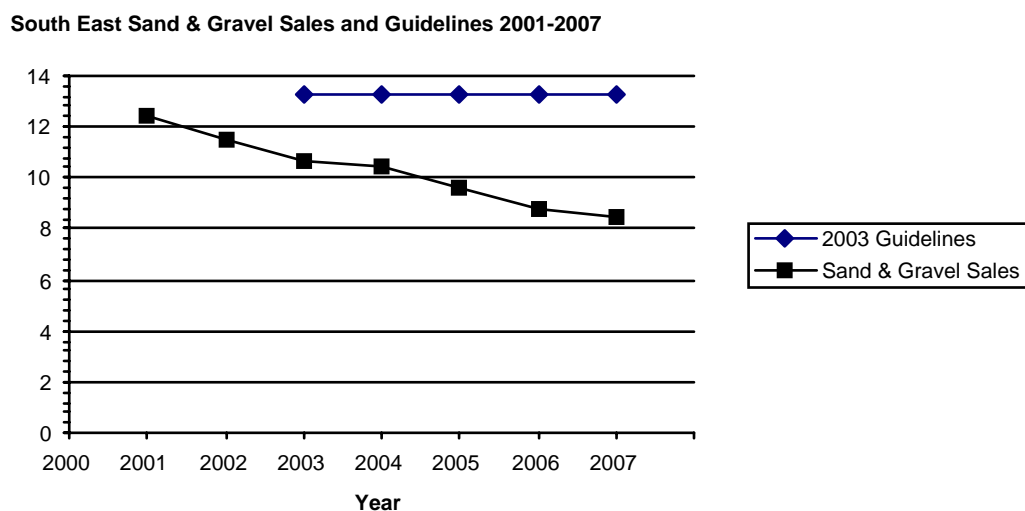
Review of the demand forecasting model to generate the Guidelines

1.7 The first part of the study, to review the model used by CLG and set out in the consultation on the draft *Guidelines*, has been deferred. CLG advise that key parts of the information needed to do this are confidential. This has also affected certain other parts of the analysis, notably assessing the impact on aggregates demand caused by the introduction of the Aggregates Levy in April 2002.

2 Overview of Sales Data Compared with *Guidelines* Figures Since 2001

- 2.1 Regional data setting out sales of aggregates and *Guidelines* provision figures (both of them split between sand & gravel and crushed rock) are set out in Table 1 for all years for which data are available since 2001 (*the remaining data from the East of England and West Midlands are expected before Christmas*). During 2001 and 2002, MPAs around the country were working on the basis of the previous national and regional *Guidelines* issued in 1994. Sales in 2001 and 2002 are therefore compared with provision figures set in the 1994 *Guidelines*. Figures have been amalgamated where necessary to reflect the regional boundaries to which the 1994 data applied.
- 2.2 The data show that in all regions in all years the *Guidelines* figures for total land-won aggregates provision exceeded actual aggregates sales. In a few regions in a few years sales exceeded *Guidelines* figures for one mineral type, but in each case these were for the less-important mineral type in each region. Also in each case the excess of the *Guidelines* figure over sales for the other mineral type more than counterbalanced for this. South East sales of sand & gravel are compared with the regional allocation in Figure 1 below.

Figure 1



- 2.3 The percentage by which sales fall short of the *Guidelines* (i.e. calculated from sales divided by *Guidelines*) are set out in Table 2. Note that, where obligations and sales are modest, only small numerical differences between the two figures can generate large percentage differences: these should be treated with caution. Nonetheless, the figures demonstrate the broad pattern of regional aggregates supply compared with *Guidelines* figures.
- 2.4 The data show that since the 2003 *Guidelines* were issued, the two regions persistently falling furthest short of their *Guidelines* allocations have been the South East and the South West. Against the previous 1994 *Guidelines*, most other regions also fell well short of their allocations. Only the East Midlands has had sales within 15% of its allocation each year since 2001.

- 2.5 A central issue for this study is whether the *Guidelines* allocation for the South East is unrealistically high or the provision in the region inappropriately low. Each of the following sections evaluates a possible explanation for the trends observed in sales, reserves and consumption of aggregates. They address variously planning applications, planning permissions, allocations, alternatives, investment, imports and substitution between material types.

Review of the Guidelines for Aggregates Provision 2005-20 as applied to South East England

Table 1 indicates the land-won provision of aggregates (and distinguishing crushed rock from sand and gravel) specified by the *Guidelines* to be provided in each region, together with the actual sales (for aggregates purposes). Figures are in millions of tonnes.

Table 1 - Sales of aggregates compared with *Guidelines* allocations by region 2001-2007 and material type (million tonnes)

| Region* | <i>Guidelines 1994 annualised</i> | | | 2001 | | | 2002 | | | <i>Guidelines 2003 annualised</i> | | | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|----------|-----------------------------------|--------|--------|-------|-------|--------|-------|-------|--------|-----------------------------------|--------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|
| material | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All |
| SE | | | | 12.45 | 2.36 | 14.81 | 11.48 | 1.60 | 13.08 | 13.25 | 2.19 | 15.44 | 10.64 | 1.20 | 11.84 | 10.40 | 1.40 | 11.80 | 9.58 | 1.60 | 11.18 | 8.80 | 1.30 | 10.10 |
| L | 37.00 | 2.67 | 39.67 | 1.09 | 0 | 1.09 | 1.09 | 0 | 1.09 | 1.19 | 0 | 1.19 | 1.00 | 0 | 1.00 | 1.09 | 0 | 1.09 | 1.04 | 0 | 1.04 | 0.96 | 0 | 0.96 |
| E | | | | 14.95 | 0.50 | 15.45 | 15.00 | 0.42 | 15.42 | 16.00 | 0.50 | 16.50 | 13.94 | 0.44 | 14.38 | 14.04 | 0.45 | 14.49 | 13.87 | 0.46 | 14.33 | 13.67 | 0.46 | 14.13 |
| SW | 7.00 | 40.67 | 47.67 | 5.31 | 26.91 | 32.22 | 4.79 | 22.95 | 27.74 | 6.63 | 28.31 | 34.94 | 4.92 | 22.40 | 27.32 | 4.66 | 20.58 | 25.24 | 4.61 | 22.24 | 26.85 | 4.56 | 21.47 | 26.03 |
| EM | 14.00 | 33.67 | 47.67 | 10.15 | 31.24 | 41.39 | 10.72 | 29.81 | 40.53 | 10.31 | 32.69 | 43.00 | 10.77 | 28.57 | 39.34 | 10.29 | 28.14 | 38.43 | 10.07 | 28.69 | 38.76 | 9.91 | 29.69 | 39.60 |
| WM | 12.00 | 10.00 | 22.00 | 9.93 | 5.49 | 15.42 | 9.47 | 5.28 | 14.75 | 10.13 | 5.81 | 15.94 | 9.56 | 5.43 | 14.99 | 8.80 | 5.09 | 13.89 | 9.10 | 4.50 | 13.60 | 9.99 | 4.30 | 14.29 |
| Y&H | 4.00 | 18.67 | 22.67 | 4.94 | 12.70 | 17.64 | 4.69 | 12.79 | 17.48 | 4.56 | 13.75 | 18.31 | 4.50 | 12.13 | 16.63 | 4.51 | 12.08 | 16.59 | 4.40 | 11.96 | 16.36 | 4.33 | 11.10 | 15.43 |
| NW | | | | 3.10 | 10.10 | 13.20 | 3.20 | 10.20 | 13.40 | 3.44 | 10.44 | 13.88 | 3.36 | 9.32 | 12.68 | 2.94 | 9.45 | 12.39 | 3.06 | 8.63 | 11.69 | 2.97 | 8.85 | 11.82 |
| NE | 7.00 | 21.00 | 28.00 | 1.18 | 5.46 | 6.64 | 1.12 | 5.76 | 6.88 | 1.25 | 7.44 | 8.69 | 1.21 | 6.69 | 7.90 | 1.35 | 6.51 | 7.86 | 1.36 | 5.74 | 7.10 | 1.33 | 5.65 | 6.98 |
| England | 81.00 | 126.67 | 207.67 | 63.10 | 94.76 | 157.86 | 61.56 | 88.81 | 150.37 | 66.75 | 101.13 | 167.88 | 59.90 | 86.18 | 146.08 | 58.08 | 83.70 | 141.78 | 57.09 | 83.82 | 140.91 | 56.52 | 82.82 | 139.34 |

* The regions to which the National *Guidelines* in 1994 referred had been changed by 2001. To enable those *Guidelines* to be applicable in 2001 and 2002, the allocations and outturns should be amalgamated to cover the 'greater South East' (the authorities currently covered by South East, London and East of England regions), and the 'greater North' (the authorities currently covered by North West and North East regions). The outturn figures for the current individual regions in 2001 and 2002 are retained for compatibility with later years.

Review of the Guidelines for Aggregates Provision 2005-20 as applied to South East England

Table 2 indicates the percentage by which actual sales of land-won aggregates for aggregates purposes (and distinguishing crushed rock from sand and gravel) fall short of the *Guidelines* in each region (figures in brackets are percentages by which sales exceed *Guidelines*).

Table 2 - Sales of aggregates compared with *Guidelines* allocations by region 2001-2007 and material type (sales % of *Guidelines*)

| Region* | <i>Guidelines 1994 annualised</i> | | | 2001 | | | 2002 | | | <i>Guidelines 2003 annualised</i> | | | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|----------|-----------------------------------|--------|--------|--------|-------|------|--------|------|------|-----------------------------------|--------|--------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| material | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All | S&G | CR | All |
| SE | | | | | | | | | | 13.25 | 2.19 | 15.44 | 19.7 | 45.2 | 23.3 | 21.5 | 36.1 | 24.6 | 27.7 | 26.9 | 27.6 | 33.6 | 40.4 | 34.6 |
| L | 37.00 | 2.67 | 39.67 | 23.0 | (7.1) | 21.0 | 25.5 | 24.3 | 25.4 | 1.19 | 0 | 1.19 | 16.0 | 0 | 16.0 | 8.4 | 0 | 8.4 | 12.6 | 0 | 12.6 | 19.3 | 0 | 19.3 |
| E | | | | | | | | | | 16.00 | 0.50 | 16.50 | 12.9 | 12.0 | 12.8 | 12.3 | 10.0 | 12.2 | 13.3 | 8.0 | 13.3 | 14.6 | 8.0 | 14.4 |
| SW | 7.00 | 40.67 | 47.67 | 24.1 | 33.8 | 32.5 | 31.6 | 43.6 | 41.8 | 6.63 | 28.31 | 34.94 | 25.8 | 20.9 | 21.8 | 29.7 | 27.3 | 27.8 | 30.5 | 21.4 | 23.2 | 31.2 | 24.2 | 25.5 |
| EM | 14.00 | 33.67 | 47.67 | 27.5 | 7.2 | 13.2 | 23.4 | 11.5 | 15.0 | 10.31 | 32.69 | 43.00 | (4.5) | 12.6 | 8.5 | 0.2 | 13.9 | 10.6 | 2.3 | 12.2 | 9.9 | 3.9 | 9.2 | 7.9 |
| WM | 12.00 | 10.00 | 22.00 | 17.2 | 45.1 | 29.9 | 21.1 | 47.2 | 33.0 | 10.13 | 5.81 | 15.94 | 5.6 | 6.5 | 6.0 | 13.1 | 12.4 | 12.9 | 10.2 | 22.5 | 14.7 | 1.4 | 26.0 | 10.4 |
| Y&H | 4.00 | 18.67 | 22.67 | (23.5) | 32.0 | 22.2 | (17.2) | 31.5 | 22.9 | 4.56 | 13.75 | 18.31 | 1.3 | 11.8 | 9.2 | 1.1 | 12.1 | 9.4 | 3.5 | 13.0 | 10.6 | 5.0 | 19.3 | 15.7 |
| NW | | | | | | | | | | 3.44 | 10.44 | 13.88 | 2.3 | 10.7 | 8.6 | 14.5 | 9.5 | 10.7 | 11.0 | 17.3 | 15.8 | 13.7 | 15.2 | 14.8 |
| NE | 7.00 | 21.00 | 28.00 | 38.9 | 25.9 | 29.1 | 38.3 | 24.0 | 27.6 | 1.25 | 7.44 | 8.69 | 3.2 | 10.1 | 9.1 | (8.0) | 12.5 | 9.6 | (8.8) | 22.8 | 18.3 | (6.4) | 24.1 | 19.7 |
| England | 81.00 | 126.67 | 207.67 | 22.1 | 25.2 | 24.0 | 24.0 | 29.9 | 27.6 | 66.75 | 101.13 | 167.88 | 10.3 | 14.8 | 13.0 | 13.0 | 17.2 | 15.5 | 14.5 | 17.1 | 16.1 | 15.3 | 18.1 | 17.0 |

* The regions to which the National *Guidelines* in 1994 referred had been changed by 2001. To enable those *Guidelines* to be applicable in 2001 and 2002, the allocations and outturns should be amalgamated to cover the 'greater South East' (the authorities currently covered by South East, London and East of England regions), and the 'greater North' (the authorities currently covered by North West and North East regions).

3 Sufficiency of Planning Permissions and Land Allocations

(i) The policy requirements

- 3.1 The *National and Regional Guidelines for Aggregates Provision in England 2001-2016* respond to the imbalances in supply of and demand for aggregates by allocating to each region obligations to ensure an adequate supply of construction aggregates. An allocation to each region is apportioned by each Regional Assembly to the Mineral Planning Authorities within it. MPS1 *Planning and Minerals* requires that in each MPA “provision should take the form of specific sites, preferred areas and/or areas of search identified in Local Development Documents”. In effect, each MPA is required to show on a map in an appropriate level of detail where extraction can take place to supply aggregates for its plan period at the annualised rate specified in its apportionment.
- 3.2 The new forward planning system introduced in the Planning and Compulsory Purchase Act 2004 requires new procedures to be followed in plan preparation. This has created a hiatus between Minerals Local Plans (or similar) produced under the previous system and the new Development Plan Documents (which are taking a considerable time to finalise). A change to the Regulations in May 2008 has caused further delay by changing the amount of detail to be included in each MPA’s ‘Core Strategy’, setting the process back as consultation must be carried out afresh on revised proposals. Many mineral planning authorities now find that the plan periods of their earlier Minerals Local Plans have expired but not yet been replaced by the new plans. In these circumstances, and as a matter of general obligation, MPAs are expected by MPS1 to maintain a ‘landbank’ of permitted reserves to ensure continuity of supply.
- 3.3 Permitted reserves of aggregates are industry estimates of the quantity of workable mineral in sites which have planning permission for extraction. Government policy is for MPAs to maintain a ‘landbank’ of permitted reserves sufficient to meet anticipated obligations to supply aggregates. The landbank which each MPA is expected to sustain should be sufficient for at least seven years’ working of sand & gravel, or at least ten years’ working of crushed rock, (at the rates specified in the regional *Guidelines* as apportioned to each MPA in the region). At the regional level in the South East, the 2003 *Guidelines* expect the South East region to enable 13.25mt of sand and gravel and 2.19mt of crushed rock to be provided annually.
- 3.4 All plans emerging under the new system will have end dates later than 2016, which is the end date for the 2003 national and regional *Guidelines*. MPAs have therefore been carrying forward beyond 2016 the annualised rate of provision specified in the 2003 policy. However, the *Guidelines* themselves are under review, and MPAs are anxious to ensure that their emerging plans are as up to date as possible by accommodating the imminently-expected revision to the *Guidelines*. This is also causing uncertainty and inhibiting progress, particularly in MPAs which anticipate that their apportionment will be changed significantly in association with the change in the regional allocation. Furthermore, Regulations have recently been amended to require the new Development Plan

Documents to last for at least 15 years from their date of adoption (i.e. 2024 or later): hardly any MPAs in the South East already have adopted plans which allocate sufficient aggregates sites to last that long.

(ii) ***The delivery - landbanks***

3.5 Some adopted plans allocating land for aggregates working are seriously out of date and have not yet been superseded by plans under the new system. For instance, Surrey, West Sussex and Kent all have Local Plans dating from 1993. On the other hand, Buckinghamshire and Milton Keynes have Local Plans adopted as recently as 2006. Milton Keynes is the only authority in the region to have decided not to prepare a Development Plan Document covering minerals site allocations, in view of the recent adoption of comparable policies under the previous system. All other authorities have begun the process, though those which were most advanced, in Kent and Medway, have both been advised that their proposals were at risk of being unsound and should be restarted.

3.6 The starting point for the following analysis is therefore not the ongoing adequacy of allocations under the previous planning system, but the adequacy of landbanks. This is supplemented by a commentary on the steps which MPAs in the region are taking to enable the industry to supply sufficient aggregates. The most recent information on landbanks is provided by SEERAWP at the end of 2007. Table 3 shows landbanks as follows for all sands and gravels

Table 3 - Sand and gravel landbanks in the main MPA groupings, 2007

| Area | Apportionment (mt) | Reserves (mt) | Landbank (years) |
|---------------------|---------------------------|----------------------|-------------------------|
| Berkshire Unitaries | 1.57 | 8.990 | 5.7 |
| Buckinghamshire | 0.99 | 11.357 | 11.5 |
| East Sussex | 0.01 | c | >7 |
| Hampshire | 2.63 | 9.218 | 3.5 |
| Isle of Wight | 0.05 | 0.535 | >7 |
| Kent | *2.37 | 21.496 | 9.1 |
| Medway | *0.16 | c | >7 |
| Milton Keynes | 0.12 | c | >7 |
| Oxfordshire | 1.82 | 5.790 | 3.2 |
| Surrey | 2.62 | 9.744 | 3.7 |
| West Sussex | 0.91 | 2.862 | 3.1 |
| TOTAL | 13.25 | 78.133 | 5.9 |

* working subdivision between Kent and Medway

c - confidential, or figure which cannot be identified without revealing a confidential figure

3.7 Table 3 has been updated to the end of 2008 for this study, taking into account permissions granted in 2008 and an estimate of sales for the year (marginally less than the 2007 figure), but making no allowance for revisions to estimates of reserves in existing permissions. This tends to understate landbanks at the end of 2008 (as in some areas output in 2008 has dropped considerably, and because

extra permissions may be issued before the end of the year in Berkshire, Hampshire and Surrey).

Table 4 - Sand and gravel landbanks in the main MPA groupings, 2008 (est.)

| Area | Apportionment (mt) | Reserves (mt) | Landbank (years) |
|---------------------|---------------------------|----------------------|-------------------------|
| Berkshire Unitaries | 1.57 | 12.6 | 8.0 |
| Buckinghamshire | 0.99 | 13.1 | 13.2 |
| East Sussex | 0.01 | c | >7 |
| Hampshire | 2.63 | 7.8 | 3.0 |
| Isle of Wight | 0.05 | 0.45 | >7 |
| Kent (2007 figs) | *2.37 | 20.4 | 8.6 |
| Medway | *0.16 | c | >7 |
| Milton Keynes | 0.12 | c | >7 |
| Oxfordshire | 1.82 | 6.0 | 3.3 |
| Surrey | 2.62 | 8.8 | 3.7 |
| West Sussex | 0.91 | 2.41 | 2.6 |
| TOTAL | 13.25 | c | n/a |

* working subdivision between Kent and Medway

c - confidential, or figure which cannot be identified without revealing a confidential figure

3.8 The data from 2008 suggest that the Berkshire Unitaries joined Buckinghamshire, East Sussex, Isle of Wight, Kent, Medway and Milton Keynes in maintaining a landbank in excess (to varying degrees) of the minimum seven year policy intention. This is not surprising in Buckinghamshire and Milton Keynes in view of their recently adopted Local Plans. It is, however, a significant achievement in Kent. The analysis now turns to those authorities with less than seven year landbanks.

(iii) ***The delivery - land allocations***

3.9 In the authorities with landbanks less than seven years, there have been available for many years' allocations of sites in adopted plans which have not been brought forward by mineral companies. In a few cases these have been due to difficulties with owners (e.g. Bleak Hill, Harbridge (Hampshire)) or because of unexpected practical difficulties (e.g. Gardeners Lane, Ridge (Hampshire)). However, in most cases the MPAs in question know of no limitations. As a result there remain workable reserves in allocated sites but without planning permission (estimated by MPAs) as follows:

| | |
|---------------------|--------|
| Berkshire Unitaries | 4.0mt |
| Hampshire* | 6.0mt |
| Oxfordshire | 2.5mt |
| Surrey** | 15.9mt |
| West Sussex | 5.0mt |

* This site is now the subject of a planning application. A further site allocated in a Local Plan in 1998 was approved as recently as 2008, with 0.78mt of reserves.

** Seven sites are affected, at some of which planning applications are in preparation.

- 3.10 If the allocated sites containing these reserves had been brought forward and then permitted, the landbanks in these authorities would now be distinctly higher. Those in Berkshire, Surrey and West Sussex would exceed seven years. Only in Oxfordshire and Hampshire, therefore, could a shortage of allocated sites possibly be claimed to have inhibited mineral companies from sustaining appropriate landbanks. Their Local Plans date from 1996 and 1998 respectively and have expired, and in both cases preparation of new Development Plan Documents is required forthwith.
- 3.11 If land allocations in adopted plans (at sites believed to be still capable of being worked) are added to permitted reserves, the supply options available to mineral companies increase significantly in most MPAs with sand and gravel landbanks under seven years' supply. The lack of or delay in planning applications from mineral companies on these sites, many of which have been available for fifteen years, is striking. Even allowing for these allocations, the planned supply in just two areas, Hampshire and Oxfordshire, would remain below the Government's indicated requirement.

Revisions to Estimates of Reserves by Minerals Companies

4.1 Reserves of aggregates are industry estimates of the quantity of workable mineral in sites which have planning permission for extraction. This information is supplied on an annual basis to SEERAWP for its Monitoring Survey. Companies may reassess the reserves in a site as time passes. New geological information may become available, or the economic worth of extracting material may be revised as the market changes. As a result the quantity of permitted reserves does not rise exclusively due to the granting of new planning permission or fall exclusively due to sales from existing permissions. Changes in company estimates of reserves can obviously affect landbanks separately from the planning process.

Table 5 - Reserves of all sands & gravels in the South East ('000t)

| At 31st December | Reserves stated by industry | Reserves net of sales & pps |
|------------------|--|-----------------------------|
| 2000 | 139,559 | 139,559 |
| 2001** | * (2001 AMR) 143,344 * (2002 AMR) 129,670 | 132,718 |
| 2002 | 121,358 | 127,684 |
| 2003 | 97,088 | 120,416 |
| 2004 | 80,809 | 112,892 |
| 2005*** | 87,285 | 107,879 |
| 2006 | 76,409 | 99,326 |
| 2007 | 78,133 | 101,444 |

Table 6 - Reserves of crushed rock in the South East ('000t)

| At 31st December | Reserves stated by industry | Reserves net of sales & pps |
|------------------|--|-----------------------------|
| 2000 | 43,800 | 43,800 |
| 2001** | 53,000 | 41,534 |
| 2002 | 51,900 | 39,934 |
| 2003 | * (2003 AMR) 52,900 * (2004 AMR) 52,400 | 38,734 |
| 2004 | 56,400 | 42,914 |
| 2005*** | 52,500 | 43,649 |
| 2006 | 51,500 | 42,349 |
| 2007 | 50,500 | 41,200 |

* Each SEERAWP Annual Monitoring Report specifies reserves at the start and at the end of the monitoring year. On these occasions the figure for the start of the year in the later report differs from the figure for the end of the year in the earlier report, as indicated.

** The figures appearing in the AM Survey 2001 were 142,000 for sand & gravel and 73,000 for crushed rock, both excluding reserves at dormant sites.

*** The figures appearing in the AM Survey 2005 were 80,929 for sand & gravel and 53,908 for crushed rock, both excluding reserves at dormant sites.

4.2 Tables 5 and 6 record the reserves reported by industry at the end of each year, for sands & gravels and for crushed rock respectively. They also show in the last

column the reserves which would have existed if they had been calculated by adding the permissions granted to the previous year's estimate of reserves and subtracting the sales from them. The difference between the two columns is a measure of the extent to which mineral companies have reassessed the reserves in sites as the years pass. The reserves derived from sales and permissions are calculated cumulatively from the reserves reported at 31st December 2000.

- 4.3 The tables show that the reserves in the region estimated by industry each year can differ substantially from the reserves calculated by adding permissions to the previous reserves figure and subtracting sales from them. These variations are even more pronounced at the MPA level, as recorded in the SEERAWP Annual Report. Only for one mineral type in one year (sand & gravel in 2005) were the changes in reserves over the calendar year the same by the two methods (i.e. there was no net industry adjustment to the regional reserves figures). The industry made major downward revisions to its estimates of sand & gravel reserves in 2002, 2003, 2004 and 2006, and upward revisions in 2005 (while the assessment at 31.12.01 is unclear). The net effect of this was that, over seven years, there were 23mt reserves of sand & gravel less than would have been expected by applying sales and permissions data. Adjustments by the industry to estimates of crushed rock reserves had the reverse effect: significant upward adjustments in 2001 and 2003 outweighed a significant downward adjustment in 2005, with the result that reserves at the end of 2007 were 9mt greater than would have been expected by applying the cumulative sales and permissions information to the reserves at the end of 2000.
- 4.4 The figures show that at all times in the South East region there were ample reserves of crushed rock. Compared with a regional allocation in the *Guidelines* requiring reserves of 21.9 million tonnes (10 years at 2.19mt), actual reserves were usually at least twice this quantity. In contrast, the landbank of reserves for sand & gravel dropped below 92.75 million tonnes (7 years at 13.25mt) in 2004 and remained below it thereafter. (The landbank would have dropped below this threshold two years later, in 2006, if every individual planning application for sand and gravel since 2001 had been approved: see Table 7.) This shows that insufficient planning permissions have been granted to maintain the landbank at the level stated in policy. However, there are two critical mitigating factors in operation:
- first, on the basis of permissions granted in relation to sales of sand & gravel, taking 31.12.00 as a starting point (in effect Year Zero for The Assembly), permissions were in theory sufficient to sustain reserves distinctly above the 92.75mt target, but this turned out not to be the case in practice due to significant net downward revisions of estimates of reserves by mineral companies (equivalent to 2-3 years' production over the seven years);
 - second, as noted in Table 7 below, the principal reason why insufficient planning permissions were granted for sand & gravel working was an insufficiency of planning applications: even if all applications since 2001 had been granted, reserves would have fallen just below the *Guidelines* level in 2006.

4.5 The adequacy of reserves can also be assessed against actual levels of aggregates supply, as well as against levels of supply for which MPAs ought to make provision as specified in the *Guidelines*. This is a relevant exercise if, as appears to be the case in the South East region (from the section on ‘Actual demand and possible reasons for it’), local supplies of aggregates can meet demand (in association with essential imports of crushed rock, in which the region is geologically deficient). If the objective was to sustain a landbank equivalent to at least seven years’ actual supply of sand & gravel, the landbank would need to be at least 59.5mt (based on seven times the most recent sales figure for 2007) or 71.9mt (based on the last seven years’ sales). Actual reserves, based on industry estimates, comprised a landbank in excess of both these targets in all years.

4.6 **The conclusions to be drawn from this analysis are:**

- **industry estimates of actual reserves fluctuate, creating significant differences from the estimates which would be calculated by adding new permissions to an earlier estimate of reserves and subtracting sales since then: to the end of 2007 there has been a net downward revision by the industry of 23mt of sand & gravel and a net upward revision of 9mt of crushed rock since 31st December 2000 on this basis;**
- **for crushed rock, the landbank of permitted reserves, set in the Guidelines, was satisfied throughout the period 2000-2007;**
- **for sand & gravel, the landbank of permitted reserves, set in the Guidelines, would have been satisfied throughout the period 2000-2007 if calculated from sales and permissions since 2000, but on reported reserves has fallen short since 2004 due to mineral companies’ net downward revision of estimates of reserves in permitted sites;**
- **landbank levels for sand & gravel set in the Guidelines for the South East region appear to be substantially higher than necessary: if the minimum landbank was set at seven times the most recent annual sales, or equal to the last seven years’ sales, actual reserves estimated by the industry would have satisfied these targets in all years.**

5 **The Pattern of Planning Decisions**

5.1 Sales of aggregates in the South East region lag below the amounts in the *Guidelines* for which provision should be made. This may be because insufficient planning permissions have been issued to facilitate this quantity of extraction. Any insufficiency of permissions could arise due to one or more of the following:

- MPAs in the region have refused too many applications;
- insufficient applications have been submitted;
- the Secretary of State has dismissed too many appeals.

i) ***Insufficient planning permissions and too many refusals?***

5.2 There are various methods for assessing the success rate of planning applications. One would be to follow the outcome of every planning application for mineral extraction submitted in the region, perhaps from 2001 to 2007 inclusive, but this is beyond the scope of this short study. Another yardstick is the finding of a report for CLG in July 2008, *Managing aggregates supply in England: A review of the current system and future options* (British Geological Survey et al), that the current approval rate of applications in the aggregates sector is about 90%. This was based on a study of CLG quarterly statistics, which cannot be broken down by region.

5.3 A further option, used here, is to compare planning permissions granted and refused each year, measured according to their mineral quantities in tonnes. This neglects withdrawn applications and the subtleties of the time taken to decide applications. However it does provide a clear exposition of outcomes, provided the figures for any individual year are not treated as necessarily representative. This information is available from the Regional Aggregates Working Parties. The data in Table 7 represent final decisions only, ensuring that applications determined first by an MPA and then subsequently by the Secretary of State are not counted twice.

Table 7 - Final planning decisions in the South East 2001-2007 ('000t)

| Mineral | Permissions | Refusals | All decisions |
|---------------|-------------|----------|---------------|
| Sand & Gravel | 35,172 | 15,796 | 50,968 |
| Crushed Rock | 8,375 | 5,650 | 14,025 |
| Total | 43,547 | 21,446 | 64,993 |

Source: 2005 Aggregates Monitoring survey for the period 2002-2005 inclusive, supplemented by SEERAWP data for the individual years 2001, 2006 and 2007, plus later corrections.

5.4 The *Guidelines* for the South East region issued in 2003 specified that provision should be made for at least 13.25mt of sand & gravel and 2.19mt of crushed rock annually, equal to 92.75mt of sand & gravel and 15.33mt of crushed rock over the 7 years 2001-07. These figures should be treated as minima, as MPAs were working to higher figures in 2001 and 2002 based on the *Guidelines* issued in 1994 (though due to boundary changes there were no formal national allocations in that period for the area currently comprising the South East).

- 5.5 Sand & gravel permissions amounted to 35.17mt compared with a *Guidelines* figure of 92.75mt in the period 2001-07. Crushed rock permissions amounted to 8.37mt compared with a *Guidelines* figure of 15.33mt in the period 2001-07. Sand & gravel permissions provided 38% of the *Guidelines* figure and crushed rock permissions comprised 55% of the *Guidelines* figure. The overall proportion supplied was 40%. Permissions comprised 69% of the tonnage in all sand & gravel decisions and 60% of the tonnage in all crushed rock decisions between 2001 and 2007. The overall proportion was 67%: i.e. circa two thirds of applications by tonnage were approved and one third refused.
- 5.6 By way of comparison, data from the AM Survey 2005 for the period 2002-05 show that for England as a whole the success rates were 79% for sand & gravel, 95% for crushed rock and 87% for all land-won aggregates. These figures (and particularly those in the South East) for all aggregates are lower than the 90% success rate of aggregates applications nationally when measured by numbers of applications, though there is no reason why tonnages and numbers of applications should yield the same results.
- 5.7 In conclusion, insufficient planning permissions have been issued to enable the *Guidelines* provision (13.25mt of sand & gravel and 2.19mt of crushed rock annually) to be satisfied without causing a significant depletion of previously permitted reserves: shortfalls between 2001 and 2007 were 62% in sand & gravel permissions (35.17mt out of 92.75mt) and 45% in crushed rock permissions (8.38mt out of 15.33mt). The success rates of planning applications in the South East 2001-07 by tonnage were 69% for sand & gravel (England = 79%) and 60% for crushed rock (England = 95%).
- ii) ***Insufficient applications?***
- 5.8 Table 7 shows the quantities of aggregates in the decisions issued by Mineral Planning Authorities in the South East in the period 2001-2007. Sand & gravel decisions covered 50.97mt compared with *Guidelines* expected provision of 92.75mt, while crushed rock decisions covered 14.02mt compared with *Guidelines* expected provision of 15.33mt.
- 5.9 The data demonstrate that insufficient planning applications were submitted by mineral companies to replenish reserves at the intended rate of provision in the *Guidelines*. Even if all applications had been permitted, the shortfalls in applications were 45% for sand & gravel and 8% for crushed rock (i.e. 55% and 92% respectively of the expected tonnages were applied for).
- iii) ***Too many appeals dismissed?***
- 5.10 Information is available, mainly from SEERAWP Annual Monitoring Reports, on the outcomes of planning appeals by mineral type. This provides greater detail on the division of approvals and refusals between MPAs and the Secretary of State. In the period 2001-07, the Secretary of State reached decisions on appeals shown in Table 8.

5.11 The data show that only a little over 1mt tonnes of sand & gravel was permitted by the Secretary of State on appeal in the South East between 2001 and 2007, and these permissions tended to be on the smaller sites. As a result, of the 69% of sand & gravel applications approved by tonnage, over 66% were approved by the MPAs. MPA refusals were upheld on appeals containing over 10mt of sand & gravel, (in addition to the 6mt refused by MPAs but not taken to appeal). In contrast, the Secretary of State approved two significant rock quarry appeals (in Oxfordshire) and refused one smaller one. The two approvals accounted for 66% of the tonnage of crushed rock permitted in the region between 2001 and 2007.

Table 8 - Appeal decisions 2001-2007 ('000t, no. of cases in brackets)

| Mineral | Permissions (6) | Refusals (9) | All decisions (15) |
|--------------------|-----------------|--------------|--------------------|
| Sand & Gravel (12) | 1,372 | 10,195 | 11,567 |
| Crushed Rock (3) | 5,500 | 600 | 6,100 |
| Total (15) | 6,872 | 10,795 | 17,667 |

5.12 The main findings for the period 2001-07 are that:

- 20% of all sand & gravel applications by tonnage (containing over 10mt) were refused by both the MPA and the Secretary of State on appeal;
- a further 12% (containing nearly 6mt) were refused by the MPA and not appealed;
- under 3% of all sand & gravel applications by tonnage were approved by the Secretary of State on appeal;
- 4% of all crushed rock applications by tonnage were refused by both the MPA and the Secretary of State on appeal;
- a further 36% (about 5mt) were refused by the MPA and not appealed;
- 39% of all crushed rock applications by tonnage were approved by the Secretary of State on appeal.

5.13 The outcomes of Secretary of State decisions have already been taken into account in the tonnages of approvals and refusals, so it is clear that the shortfall in provision against the *Guidelines* is due to insufficient applications rather than an excess of Secretary of State refusals. The main additional conclusion from these data is that decisions by the Secretary of State largely reinforced the decisions taken by MPAs in respect of sand & gravel. This suggests that MPAs cannot for the most part be held to have unadvisedly withheld planning permissions for sand & gravel working. However, the same conclusion cannot be drawn for the less critical material of crushed rock, where two significant permissions on appeal in Oxfordshire had a large proportionate impact on the regional figures.

5.14 **The main overall conclusion from this part of the analysis is that there is a very significant shortage in planning permissions for aggregate materials compared with the *Guidelines* figures, but that the principal cause of this shortfall is insufficient planning applications. Refusals by MPAs of planning permissions which they ought to have granted (as measured by the overturning of those decisions on appeal to the Secretary of State) have been minor, especially in respect of sand & gravel.**

6 Investment by Mineral Companies

6.1 The previous section demonstrated that mineral companies have not shown a sufficient interest in investing in new planning applications to enable the *Guidelines* provisions to be satisfied. In addition to this key finding, this section briefly evaluates the opportunities for companies to invest in aggregates output in the South East region by other means. Mineral Planning Authorities in the region were asked to identify sites with planning permission and significant workable reserves which were either inactive or not being used to their full extent. Further restrictions were placed on such sites, itemised below, to ensure that only sites with significant unused but usable reserves were identified.

i) *Reactivation of inactive sites*

6.2 In evaluating inactive sites, the study ignored sites which:

- i) were statutorily dormant: these cannot be reopened without authorisation, so the quantity of workable mineral they contain is at present indeterminate;
- ii) held very limited reserves, where it was uncertain whether the remaining reserves (if any) would justify the effort of recommencing operations;
- iii) had not yet commenced working but which were considered to be part of a planned programme of operations;
- iv) awaited restoration, on the basis that they contained no further workable reserves.

6.3 In effect, this part of the study aimed to identify sites which contained significant reserves and were (a) previously worked but mothballed (or virtually so) prior to the economic downturn, or (b) permitted but landbanked with no planned opening date. The sites identified by MPAs were:

- Stoke Road, Hoo St Werburgh, Medway UA, (Lafarge), 1.2mt
- Sheephouse Farm, Maidenhead, Windsor & Maidenhead BC (Summerleaze), 4mt
- Winterbourne Quarry, nr. Canterbury, Kent (Pearson)

6.4 In addition, there is an exceptional position on Romney Marsh on the borders of Kent and East Sussex. In East Sussex, the Scotney Court Extension/Wall Farm site near Camber (Brett), is permitted (with 3.23mt of reserves) and limited by planning condition to being used only after the completion of Scotney Court, which itself is only now being brought into use and is not expected to be completed until 2025. As a result, the reserves at the Extension site are neglected for landbank purposes, since they are not expected to be available with the period of the emerging East Sussex and Brighton & Hove Minerals and Waste Core Strategy. Permission would be needed to bring the Extension site into use earlier than currently programmed, but that might be possible if there was a pressing need. Meanwhile in Kent, permission has been granted for development at Allens Bank near Lydd (Brett) (with 0.7mt of reserves): originally to serve the construction of the Channel Tunnel, this material will become available for general use but has no start date planned.

6.5 Furthermore, MPAs identified inactive sites where reopening is already planned, in each case (unless specified) taking over from a completed site nearby. In these cases, the industry is already preparing to use its backlog of available planning permissions, and will maintain production without the need to seek fresh sites to operate:

- Kingsmead Quarry, Horton, Windsor and Maidenhead BC (CEMEX)
- Farnham Quarry, Alton Road, Surrey CC (CEMEX)

6.6 Taken together, these permitted but inactive sites could probably supply well over 10mt of aggregates - over one year's worth of regional output - in some cases with no further involvement of the planning authorities.

ii) ***Increasing the output from active sites***

6.7 MPAs were also asked to identify sites operating below their full capacity where it would be practicable to increase production significantly (100,000tpa or more) on a sustainable basis over many years.

6.8 This part of the study ignored sites which:

- i) held limited reserves which would be worked out in less than about five years if output was at a significantly higher rate (e.g. Frithend Sand Pit, Sleaford, Hampshire CC (Grundon));
- ii) were expected to increase output rates significantly in the very near future following the cessation of operations at another site nearby (e.g. Badminton Farm, Fawley, Hampshire CC, (Cemex));
- iii) were constrained by planning conditions, plant capacity or other limitations which could only be overcome with new authorisations (Moorhouse, Westerham, Surrey (Titsey Estate));
- iv) might have had their recent outputs affected by the economic climate: this was covered by reviewing the condition of sites at the end of 2006.

6.9 The study therefore aimed to identify sites which appeared to be working at a fraction of their known capacity (e.g. where they had achieved much higher outputs in previous years), where the shortfall in throughput represented a genuine opportunity for additional working rather than the impact of current market conditions. The sites identified were:

- 1) Isle of Grain Quarry, Perrys Farm, Medway UA (Clubb)
- 2) Bleak Hill, Somerley, Hampshire CC (Cemex)
- 3) Hyde Farm, Beaconsfield, Bucks (Aggregate Industries)
- 4) Springfield Farm, Beaconsfield, Bucks (Springfield Farms)

6.10 **The conclusion can be reached that sites are available in different parts of the region capable of greatly increasing their production without any further authorisations (neglecting Kent, for which information is not readily available). This again suggests that the aggregates industry is not investing in the opportunities open to it. The industry does not appear to be under great**

pressure, as a result of alleged deficiencies in the planning system to provide fresh permissions, to use intensively the workable mineral already available to it.

7 Actual Demand and Possible Reasons for it

7.1 This section studies a series of possible explanations for the observed pattern of supply and demand. This attempts to establish whether the shortfall in the provision of aggregates in the South East, measured against the *Guidelines* allocations, has been caused by (or had any knock-on effects on) contributions to regional consumption by other types of material or imported materials. This would inform a view on whether provision in the South East has been held down artificially against demand.

(i) *Comparison of production and consumption in the South East region*

7.2 Trends in demand for primary aggregates can be assessed every four years when thorough information is collected by RAWPs and collated in Aggregates Monitoring (AM) Surveys. Information is available from two such AM Surveys since the Assembly was established, for 2001 and 2005. These surveys are almost wholly confined to data on primary aggregates. Other surveys specially commissioned by CLG have studied the contributions to supply from a range of non-primary sources such as construction, demolition and excavation wastes, asphalt plantings and secondary aggregates (waste materials from other processes).

7.3 Those other surveys suggest that non-primary materials contributed about 57.75mt to consumption in England in 2005, representing nearly 28% of total demand. The impact of non-primary sources is considered later, after an evaluation of trends in primary aggregates supply and demand.

7.4 Key data on primary aggregates sales and consumption in 2001 and 2005 in the South East are given in Tables 9 and 10.

Table 9 - South East aggregates sales & consumption by type, 2001 & 2005 ('000t)

| SE | Primary aggregates sales | | | | Primary aggregates consumption | | | |
|------|--------------------------|---------------|--------|--------|--------------------------------|---------------|--------|--------|
| | Crushed rock | Sand & gravel | Marine | Total | Crushed rock | Sand & gravel | Marine | Total |
| 2001 | 2,398 | 12,450 | 7,219 | 22,067 | 14,603 | 12,488 | 7,036 | 34,127 |
| 2005 | 1,238 | 9,573 | 5,952 | 16,763 | 7,935 | 7,551 | 5,691 | 21,176 |

Table 10 - South East aggregates sales & consumption by type, 2001 & 2005 (%)

| SE | Primary aggregates sales | | | | Primary aggregates consumption | | | |
|------|--------------------------|---------------|--------|-------|--------------------------------|---------------|--------|-------|
| | Crushed rock | Sand & gravel | Marine | Total | Crushed rock | Sand & gravel | Marine | Total |
| 2001 | 10.87 | 56.42 | 32.71 | 100 | 42.79 | 36.59 | 20.62 | 100 |
| 2005 | 7.39 | 57.11 | 35.51 | 100 | 37.47 | 35.66 | 26.87 | 100 |

7.5 The South East region experienced a significant decline between 2001 and 2005 in production (24%) and consumption (38%) of primary aggregates. This affected all three materials: land-won sand & gravel, crushed rock and marine-dredged sand & gravel. The shortfall in regional production compared with consumption fell from about 12mt in 2001 (35%) to about 4.4mt in 2005 (21%).

- 7.6 The proportions of total production and consumption of land-won sand & gravel remained almost unchanged between the two years. Meanwhile the proportionate contributions of crushed rock to production and consumption declined while that of marine-dredged sand & gravel increased.
- 7.7 In 2001, production and consumption were almost the same both for land-won sand & gravel and for marine-dredged sand & gravel: in other words the region was neither a net importer nor a net exporter of any significance. However, four years later this changed in respect of land-won sand & gravel: the region became a net exporter of about 2 million tonnes, representing over one fifth of the regional land-won sand & gravel production. This was caused by an increase in exports and a still more pronounced drop in imports. This 2mt was in effect substituted by marine-dredged sand & gravel (had marine sand & gravel maintained its 22.71% share of production in 2001 into 2005, its output would have been 3.806mt rather than the actual 5.952mt, a difference of just over 2mt).
- 7.8 In both 2001 and 2005, the South East was, of course, a major importer of crushed rock from elsewhere. This compensated for the minor amount produced within the region in both years. Even though crushed rock remained the single most important material type consumed in the region, the decline in tonnes of crushed rock consumed in only four years was 46% (and its proportionate share was also down by five percentage points). The AM 2001 and 2005 surveys show that imports of crushed rock into the South East declined from 12.742mt to 6.850mt, similarly a decline of 46% in just four years.
- 7.9 The data suggest that in a period of rapidly declining demand between 2001 and 2005, an increase in the proportionate contribution of marine-dredged sand & gravel to both production and consumption in the South East region had two knock-on effects. First, it substituted about 2mt for consumption of land-won sand & gravel in the region. Second, because the production of land-won sand and gravel declined much more slowly than its consumption, more locally land-won sand & gravel production was exported and significantly less imported (causing net exports to rise to 2mt).
- 7.10 At the same time as these trends appeared between 2001 and 2005, alternative (non-primary) aggregates increased their share of the overall (declining) market, as did marine aggregates. Figures 2 and 3 below show total consumption of all types of aggregates in the South East in 2001 and 2005 respectively. The opportunity has been taken to distinguish crushed rock imports to the South East from outside England and Wales as distinct from those from the English and Welsh regions: both declined in their quantity and overall share of the market over the four year period. Emphasis has been given to rock imports from the English and Welsh regions (principally the South West region), showing not only the significant decline in the quantity imported, but that this represented a declining (not increasing) share of a market that was already falling rapidly before the current economic downturn.

Figure 2 (Total consumption in 2001 = 40.76mt)

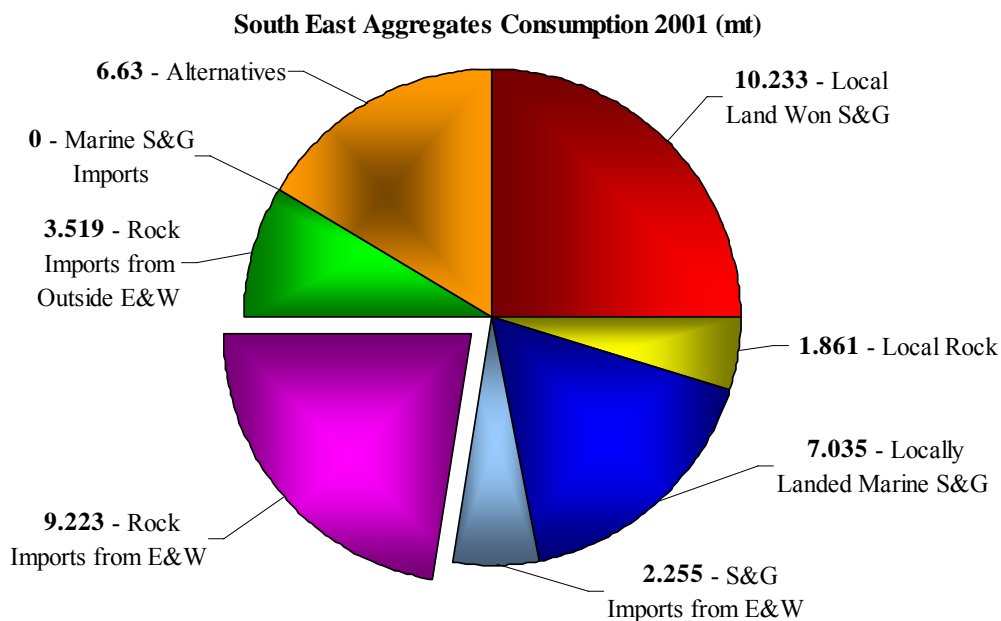
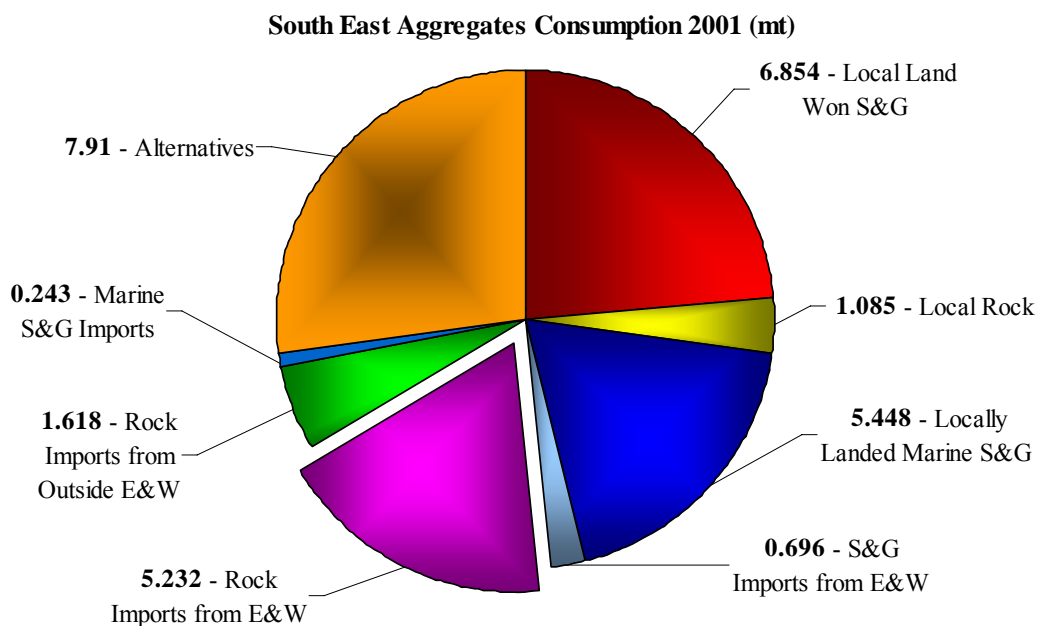


Figure 3 (Total consumption in 2005 = 29.09mt)



7.11 From this review can be drawn the conclusions that:

- sand & gravel increased, not decreased, its proportionate contribution to South East consumption between 2001 and 2005 (mainly due to a proportionate rise from marine sources);
- no shortage in land-won sand & gravel emerged in the South East between 2001 and 2005: the reverse was true, with the region becoming a net exporter of 2mt;
- crushed rock imports to the South East plummeted between 2001 and 2005 and their share of regional consumption declined, suggesting that

- there was no extra shortfall in overall South East aggregates production which needed to be supplied from elsewhere;**
- **overall the shortfall between South East consumption and the region’s ability to produce its own aggregates eased significantly between 2001 and 2005 in both absolute and proportionate terms.**
- 7.12 **There is therefore no evidence at the regional level to suggest that there is a worsening problem of mineral supply from South East sources in relation to demand between 2001 and 2005, the two years when comparison is practicable. The reverse is indicated: crushed rock imports declined by nearly 6mt between the two years, and net exports of land-won sand & gravel increased by 2mt. Rather than South East aggregates sales being held back by a shortage in supply compared with the *Guidelines*, the pattern of supply was driven by a declining demand and the proportionate contribution from South East aggregates sales increased in the period 2001-2005. The shortfall in aggregates provision in the South East, arising principally from a geological dearth of crushed rock, is therefore having a declining rather than an increasing impact on regions which export to the South East. This suggests that the *Guidelines* allocation to the South East could be reduced (to reflect the market more accurately) without causing other regions to increase their supplies into the South East or adversely affecting the construction industry.**
- 7.13 A final check should be run on these conclusions to establish whether data from just two single years is representative. There is no means of doing this for the consumption data, but the 2001 and 2005 sales data can be placed in the context of data for every other year between 2001 and 2007. Unfortunately there are some differences in 2001 and 2005 between the AM Survey figures and the SEERAWP Annual Monitoring Report figures, which are significant in respect of landings of marine-dredged aggregates. Resolving these differences has not been within the capacity of this study. The figures in Table 11 are presented from SEERAWP, to facilitate a consistent series, with footnotes indicating equivalent figures from the AM Surveys. As the SEERAWP figures for crushed rock sales are heavily rounded in most years, the total figures for each year are necessarily approximate.
- 7.14 When expressed as percentages, in Table 12, the SEERAWP data for all years since 2001 broadly confirm the findings for 2001 and 2005 from the AM Surveys, with even the data on marine-dredged sand & gravel never being more than 3 percentage points apart. Noting also the rounding of SEERAWP’s crushed rock figures, the AM Survey results can be viewed as reasonably representative of trends since the millennium, and the conclusions drawn above can therefore stand.

Table 11 - South East sales of primary aggregates by type 2001-2007 ('000t)

| SE sales | Crushed rock | Sand & gravel | Marine | Total |
|----------|--------------|---------------|-----------|--------|
| 2001 | *2,360 | 12,450 | ***6,502 | 21,312 |
| 2002 | 1,600 | 11,484 | 6,575 | 19,659 |
| 2003 | 1,200 | 10,638 | 6,517 | 18,355 |
| 2004 | 1,400 | 10,405 | 5,666 | 17,471 |
| 2005 | **1,600 | 9,575 | ****5,487 | 16,662 |
| 2006 | 1,300 | 8,804 | 5,880 | 15,984 |
| 2007 | 1,500 | 8,502 | 6,507 | 16,509 |

Source: SEERAWP

* AM Survey: 2,398

** AM Survey: 1,238

*** AM Survey: 7,219

**** AM Survey: 5,952

Table 12 - South East sales of primary aggregates by type 2001-2007 (%)

| SEERAWP with AM data in bold | Crushed rock | Sand & gravel | Marine | Total |
|------------------------------|--------------|---------------|--------------|------------|
| 2001 | 10.87 | 56.42 | 32.71 | 100 |
| 2001 | 11.1 | 58.4 | 30.5 | 100 |
| 2002 | 8.1 | 58.4 | 33.4 | 100 |
| 2003 | 6.5 | 58.0 | 35.5 | 100 |
| 2004 | 8.0 | 59.6 | 32.4 | 100 |
| 2005 | 7.39 | 57.11 | 35.51 | 100 |
| 2005 | 9.6 | 57.5 | 32.9 | 100 |
| 2006 | 8.1 | 55.1 | 36.8 | 100 |
| 2007 | 9.1 | 51.5 | 39.4 | 100 |

ii) *Trends in the supply of alternative aggregates*

7.15 Alternative sources of aggregates (recycled and secondary materials) have contributed to total consumption in the South East. Table 13 represents the best estimates, used by CLG, based on surveys of arisings in 2001, 2003 and 2005, except that the data for asphalt road planings derives from a survey in 1991. Material is assumed to be used in the same region as that in which it is produced. The figures are best estimates and unlikely to be as accurate as data on primary aggregates.

Table 13 - Production and consumption of alternative aggregates (mt)

| Year | Alternative aggregates used in the South East | Alternative aggregates used in England | South East as percentage of England consumption |
|------|---|--|---|
| 2001 | 6.63 | 52.71 | 12.6 |
| 2003 | 6.66 | 55.56 | 12.0 |
| 2005 | 7.91 | 57.75 | 13.7 |

7.16 The figures show that South East usage of alternative aggregates has grown by nearly one fifth in the four years 2001-05. Between 2001 and 2003 this was slightly slower than the growth rate nationally, but between 2003 and 2005 slightly faster. As a result, aggregates consumption in the South East from all sources, primary and alternative, was as indicated in Table 14.

Table 14 - Consumption of primary & alternative aggregates in the South East (mt)

| Year | Primary | Alternatives | Total | % Alternative |
|------|---------|--------------|-------|---------------|
| 2001 | 34.13 | 6.63 | 40.76 | 16.3 |
| 2005 | 21.18 | 7.91 | 29.09 | 27.2 |

7.17 The effect of a rising contribution of alternatives to South East consumption in the period 2001 to 2005, coupled with a 29% decline in overall demand, had the effect of nearly doubling the proportionate contribution of alternatives to regional supply in just four years. At 27.2% of consumption, alternatives in the region closely reflected the 2005 national average. Nationally, alternatives had comprised 23.8% of consumption in 2001, so the major change in the South East in the period 2001 to 2005 was to bring the regional contribution of alternatives to the England average from a distinctly lower proportion.

7.18 Alternative aggregates in the South East have tended to replace the coarse fraction of primary aggregates. This will have tended to reduce the need for crushed rock (and imports of it) more than for sand. However, the scale of the change between 2001 and 2005, at just 1.28mt, even if entirely at the expense of imported crushed rock, was modest. The change could only have accounted for one fifth of the change in crushed rock consumption since 2001¹.

7.19 **The conclusions from this assessment are that:**

- **the use of alternative aggregates in the South East rose in 2005 to the national average: these should therefore not be assumed to be having any special regional impact on the pattern of supply and demand;**
- **the impact of the change in the use of alternative materials in the South East between 2001 and 2005 was modest in numerical terms, though much more pronounced proportionately in a declining overall market, and could only have accounted for one fifth of the change in crushed rock consumption after 2001.**

(iii) ***Imports into the South East***

7.20 The contributions of imports and local supplies to regional consumption are monitored every four years in the AM Surveys. The significant decline in crushed rock imports into the South East between 2001 and 2005 has previously been noted. However, changes in the pattern of aggregates movements between regions tend to change gradually, so there is merit in examining data over many

¹ Crushed rock consumption in the South East declined from 42.79mt in 2001 to 37.47mt in 2005, a drop of 5.32mt. If the assumption is that the increase in alternatives in the South East, at 1.28mt, entirely replaced crushed rock, then crushed rock consumption would otherwise have dropped by 6.60mt. 1.28mt is 19% of 6.60mt.

years. The difficulty in doing this in the South East, of course, is that prior to 2001 the South East included London, Essex, Hertfordshire and Bedfordshire, so data on imports and exports do not compare like with like. The following analysis aims to identify the main trends in imports and exports affecting the South East since the highest peak in demand in 1989. In effect there are two separate trends to identify: between 1989 and 1997 and between 2001 and 2005.

7.21 Table 15 summarises the unadjusted regional data since 1989, and includes percentages which each source makes to total consumption.

Table 15 - Primary aggregates consumption in the South East by source ('000t)

| Year | Sand & gravel imports | % | Crushed rock imports | % | Sales within region | % | Total consumption |
|------|-----------------------|---|----------------------|----|---------------------|----|-------------------|
| 1989 | 2,374 | 3 | 18,924 | 25 | 53,144 | 71 | 74,442 |
| 1993 | 1,321 | 3 | 12,026 | 27 | 31,910 | 70 | 45,257 |
| 1997 | 1,157 | 3 | 11,340 | 30 | 25,564 | 67 | 38,061 |
| 2001 | 2,255 | 7 | 12,742 | 37 | 19,130 | 56 | 34,127 |
| 2005 | 939 | 4 | 6,850 | 32 | 13,387 | 63 | 21,176 |

7.22 The data for 2001 are significantly different from the figures which would have appeared had the previous boundaries to the South East region continued. In particular, London imported more than 4.3mt of aggregates from other regions (excluding the South East), and that alone is large enough to show that total consumption in 2001 on a like for like basis was higher - not lower - than in 1997. In other words, the most striking feature of the table's consumption data for the South East, which is the rapidly declining overall level of consumption, in reality had a discontinuity in 2001.

7.23 Imported sand & gravel has held a small but reasonably consistent share of the market, certainly to 1997. Crushed rock imports have fluctuated. After the peak year of 1989, the quantity of crushed rock imports fell to around 12mt for a period (though this contributed a rising share of total consumption, balanced by a declining share from locally produced sand & gravel). However the 2001 figure would have been substantially greater than the recorded 12.7mt but for the change in regional boundaries: London alone imported nearly 2.5mt of crushed rock in 2001. Nonetheless, crushed rock imports appear to have peaked in 2001 (regardless of which regional boundaries are used), and then declined remarkably, by 6mt just within the reduced regional boundaries, by the time of the 2005 survey.

7.24 There is a need to apply one correction to the data: an allowance for exports from the South East (to set against the gross imports into it). Table 16 shows the net contribution of imports to total consumption, combining the effects of all imported and exported primary aggregates. (Note that the percentages are for indicative purposes and not 'true' percentages: only 'gross imports', neglecting all exports, could be taken as a proper percentage of total South East consumption.)

Table 16 - Contribution of net imports into the South East 1989-2005 ('000t)

| Year | Net imports | % | Total consumption |
|------|-------------|----|-------------------|
| 1989 | 19,143 | 26 | 74,442 |
| 1993 | 11,983 | 26 | 45,257 |
| 1997 | 11,098 | 29 | 38,061 |
| 2001 | 12,445 | 36 | 34,127 |
| 2005 | 4,948 | 23 | 21,176 |

- 7.25 Net imports of all primary aggregates were for most years similar to gross imports of crushed rock (i.e. imports and exports of sand & gravel approximately matched each other every year). However, imports of sand & gravel dropped significantly in 2005 while exports increased. It is now the 2001 data that look exceptional, when the proportionate contribution of net imports peaked. (The proportionate contribution of net imports in 2001 would have been still greater if the previous boundaries of the South East had been retained.) The 2005 data suggest that this experience has passed, as net imports in this most recent survey year made an especially small proportionate contribution.
- 7.26 The data show that imports made an important contribution to South East consumption for many years, and this increased in proportionate significance as overall regional consumption dropped. However, imports are now much less important than they have been in the past. Imports dropped sharply in 2005 compared with 2001, and this was especially true in net terms, due to the increase in sand & gravel exports. The proportionate contribution of net imports was particularly low in 2005.
- 7.27 The conclusions which can be drawn from this information are not straightforward. Over the years to 2001 there was a small but clear decline in the proportion of South East consumption supplied by local material (whether land-won or marine-dredged). Imports have made up the difference, especially crushed rock. One possible cause of this might be that there has been increasing difficulty in obtaining the mineral needed from within the South East, so imports have been drawn in. However, the detailed information on imports and exports tends not to support this proposition:
- the greater proportionate importance of crushed rock imports up to 2001 arose mainly because overall demand was dropping faster than the rate at which crushed rock was imported;
 - exports from the South East have increased, especially between 2001 and 2005, while sand & gravel imports dropped significantly: in effect sand & gravel working took place preferentially in the South East region rather than elsewhere;
 - because the tonnage of primary aggregates imports dropped sharply between 2001 and 2005, and net imports still more so, the implication is of a diminishing rather than an increasing problem of local supply (if problem there is at all).

(iv) ***Substitution between crushed rock and sand & gravel***

7.28 Over the years crushed rock has gradually substituted for sand & gravel in aggregates supply, including in the manufacture of concrete. The reasons for this are beyond the scope of this study, but the implications have the potential to be significant. A reasonable expectation might be that in regions like the South East, London and East of England, which have few rock resources, a rise in the preference for using crushed rock might prompt imports of crushed rock to substitute for local supplies of sand & gravel.

7.29 This can be assessed by comparing the proportions of regional consumption by mineral type over time. Using proportions rather than actual tonnages allows for fluctuations in overall demand. This is set out in the Table 17. Figures are presented for the greater South East (i.e. the current regions of South East, London and East of England) to enable comparisons for years prior to 2001. They are similarly combined for the North East and North West. Data are derived from the AM 2005 Survey Table D2: the figures in Table 17 are for crushed rock, with the remainder being sand & gravel (both land-won and marine-dredged). Data exclude so far as practicable aggregate minerals used for non-aggregates end uses.

Table 17 - Crushed rock as a percentage of regional consumption 1973-2005

| Region | 1973 | 1977 | 1985 | 1989 | 1993 | 1997 | 2001 | 2005 |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| SE/L/EE | 16.8 | 16.6 | 21.6 | 28.3 | 28.4 | 31.1 | 36.1 | 34.6 |
| SW | 71.6 | 68.1 | 69.6 | 74.2 | 80.0 | 72.9 | 75.3 | 74.8 |
| EM | 49.7 | 54.3 | 58.6 | 58.6 | 63.4 | 64.5 | 62.4 | 58.6 |
| WM | 49.8 | 49.2 | 51.1 | 56.7 | 51.8 | 48.3 | 52.3 | 54.3 |
| Y&H | 61.8 | 62.1 | 63.1 | 67.9 | 68.3 | 66.5 | 69.5 | 64.9 |
| NE/NW | 64.1 | 68.5 | 75.2 | 75.9 | 77.9 | 76.5 | 78.7 | 78.3 |
| Rest of E | 60.6 | 61.7 | 64.8 | 67.5 | 69.7 | 67.6 | 69.0 | 67.4 |
| England | 45.0 | 45.9 | 49.3 | 53.9 | 57.9 | 57.2 | 57.6 | 57.1 |

7.30 The figures show primarily that the greater South East has enduringly and by far the lowest proportionate use of crushed rock. Table 17 also shows that the progressive substitution of sand & gravel by crushed rock between 1973 and 2005 has affected all regions but the greater South East more than England as a whole. The increase was 17.8 percentage points 1973-2005 in the greater South East compared with 12.1 percentage points for England. However, the trend peaked in 2001: the increase in crushed rock between 1973 and 2001 was 19.3 percentage points in the greater South East against 12.6 in England. The trend reversed fractionally in the South East and in most other regions between 2001 and 2005. (The impact in the greater South East looks more dramatic in the sense that the effect of the substitution has been to more than double crushed rock's share of the market over the last 30 years, which has not happened in any other region; however, this is simply because in no other region would such a level of substitution have been practicable.)

- 7.31 Some allowance should also be made for the high proportion of England's total demand represented by the greater South East (which was 35.6% of consumption in 1973 and 31.4% in 2005). This would tend to cause the figures for the greater South East noticeably to pull the England figures in the same direction. The combined figures for the regions of England outside the greater South East have therefore been identified separately in Table 17. These also show an increase in the proportion of crushed rock consumption, but this was by just 6.8 percentage points between 1973 and 2005. The data therefore show that the rate of increase in crushed rock consumption in the greater South East over the last 30 years has been nearly 50% greater than for England and nearly three times as fast as in the rest of England outside the greater South East.
- 7.32 Another finding from the data is that in the rest of England outside the greater South East, the substitution of sand & gravel by crushed rock was largely achieved in the period 1973 to 1989 (a 6.9 percentage point increase, with subsequent figures being much the same as 1989's). In the greater South East, on the other hand, the substitution carried on: a further 6.3 percentage points were added by 2005 in addition to the 11.5 percentage points increase between 1973 and 1989. This could imply that since 1989 the continuation of the national substitution process on any scale was only practicable in the South East, given the much higher proportions of crushed rock already used in all the other regions. Indeed even by 2005 the proportion of consumption represented by crushed rock in the greater South East region was still well below the proportion in all other regions in 1973, let alone in 2005. Alternatively, there may be a reason for the continuation of the substitution trend which is specific to the South East region. We explore these possibilities below.
- 7.33 Additional analysis is possible for the current South East region alone between 2001 and 2005. Table 9 showed that the consumption of crushed rock in the South East plummeted between 2001 and 2005 from 14.6mt to 7.9mt. Although crushed rock still held a major share of the market, Table 10 showed that this dropped from 42.8% to 37.5% over the four years. Table 15 shows that crushed rock imports to the South East also dropped dramatically from 12.7mt to 6.8mt in the same period. There was therefore less substitution by imported crushed rock in 2005 than there had been in 2001. As demand dropped, the import of crushed rock fell faster than did the reliance on SE sources. In particular, the share of crushed rock fell faster than the share of locally-won sand and gravel. (Table 10 showed that it was the rising share of marine-dredged aggregates landed in the South East which replaced these.) The data therefore show that imports of crushed rock were preferentially given up by the South East from 2001 to 2005, not that declining output in the South East put additional pressure on other regions to export rock to the South East as a kind of compensation.
- 7.34 **The conclusions which can be drawn on substitution by crushed rock are as follows:**
- **crushed rock has taken a progressively larger share of the greater South East market since 1973, though this peaked in 2001 in line with England as a whole;**

- **this trend towards crushed rock largely ceased in the rest of England by 1989, but continued in the greater South East;**
 - **the rate of substitution of crushed rock for sand & gravel has been faster in the greater South East than elsewhere in England;**
 - **the greater South East continues to use a substantially higher proportion of sand & gravel, rather than crushed rock, compared with other regions of England, so the scope for substitution remains higher in the greater South East than elsewhere;**
 - **the rising proportion of crushed rock use in the greater South East has been achieved by increasing the share of total demand met by imports from other regions (within the context of falling overall demand);**
 - **there was less substitution by imported crushed rock for South East land won sand & gravel in 2005 than there had been in 2001 (both quantitatively and as a share).**
- (v) *Substitution between crushed rock and sand & gravel in the concrete market*
- 7.35 There may have been a continuing trend in the greater South East since 1989 of substituting crushed rock for sand & gravel specifically for the principal end use of concreting, for which extra imports were required. As this material has been imported principally from the South West and East Midlands, this possibility can be checked by examining trends in sales of concreting aggregates from these regions. Table 17 shows that the South West and East Midlands experienced virtually no change in their proportionate consumption of crushed rock between 1989 and 2005. If, therefore, the proportion of sales from the South West and East Midlands used for concrete increased between these two years, this could indicate extra sales of concrete to the greater South East as part of the continuing substitution trend (if all other variables were constant). This would be even more likely if the proportion of total crushed rock sales from these exporting regions to the greater South East increased in line with the substitution identified in the greater South East. Table 18 shows the trends. (Significant amounts of crushed rock were also brought to the greater South East from Outside of England & Wales (i.e. Scotland and abroad), but their end uses are not recorded.)
- 7.36 The key dates for comparison in Table 18 are 1989 and 2005, but data are also presented for intermediate years to show trends. The figures indicate that crushed rock sales for concreting took an increasing share of the South West region's sales after 1989 to 2001, but fell back by 2005. In contrast, the share of the East Midlands crushed rock sales used for concreting declined slightly after 1989 to 2001, but recovered strongly in 2005.

Table 18 - Sales of SW and EM rock for concreting and for export to the greater SE
(thousand tonnes and as a percentage of crushed rock production in producing region)

| Source region | Crushed rock sales for concreting | | | | Crushed rock exports to greater SE | | | |
|---------------|-----------------------------------|-----------|--------------|-----------|------------------------------------|-----------|--------------------|-----------|
| | SW | | EM | | SW | | EM | |
| | '000 t | % | '000 t | % | '000 t | % | '000 t | % |
| 1989 | 5,033 | 13 | 4,467 | 13 | 11,066 | 29 | 6,341 | 19 |
| 1993 | 3,757 | 13 | 2,914 | 9 | 7,698 | 26 | 5,792 | 18 |
| 1997 | 4,187 | 18 | 3,314 | 11 | 5,126 | 22 | 4,274 | 14 |
| 2001 | 4,760 | 18 | 3,795 | 12 | ¹ >7,238 | ≥27 | ² 7,408 | 24 |
| 2005 | 3,135 | 14 | 4,801 | 17 | ³ 5,733 | 21 | ⁴ 6,946 | 24 |

1 - Exports to current South East region = 6,620

2 - Exports to current South East region = 1,727

3 - Exports to current South East region = 3,810

4 - Exports to current South East region = 1,087

7.37 In the East Midlands, the proportion of crushed rock sales used for concrete did increase between 1989 and 2005 (neglecting the trends in the intervening years). Furthermore, the proportion of crushed rock exports from the East Midlands to the greater South East increased between those two years: the tonnage involved rose in an otherwise declining market. This does suggest that there may well have been some extra use of East Midlands crushed rock instead of greater South East sand and gravel due to the preferential use of rock in concrete. However, the scale of substitution is modest, and caution should be exercised in drawing conclusions because of the volatile pattern of the data over the intervening years. Also, for the modern South East region, the East Midlands figures are of lesser importance because, as the footnotes to Table 18 show, the bulk of the East Midlands exports to the greater South East are taken by London and the East of England rather than the current South East.

7.38 The proportion of the South West's crushed rock sales which was exported to the greater South East declined after 1989 (except possibly in 2001). Even so, crushed rock from the South West may still have been substituting increasingly for sand and gravel in the greater South East. This is because, unlike exports from the East Midlands, exports from the South West plummeted between 1989 and 2005. Without substitution in the South East concrete market, the figures for South West crushed rock sales for concreting might well have dropped still faster than they did. The data simply show that - in an era of rapidly declining demand in the South East - there is less need for movements into the South East in total. The export data therefore principally reflect the point that not all other variables could be held constant while the process of substitution was analysed.

7.39 The role of the South West is especially important for the South East on its current boundaries. The South East is by far the most important market for crushed rock exported from the South West (rather than to London or the East of England). In 2005, crushed rock sales from the South West to the South East were 3.81mt (61% of all its rock exports) compared with 1.44mt to London and only 0.48mt to the East of England. Sales to the South East had been 6.62mt in 2001, representing 81% of all its rock exports, but clearly declined sharply after this. Likewise, from

a South East perspective, the South West was by far the most important source of imported crushed rock. Nonetheless, as with the East Midlands data, some caution should be exercised in drawing conclusions because of the volatile pattern of the data in the years between 1989 and 2005.

7.40 There does appear to be a small element of substitution by imported crushed rock in place of locally-produced sand and gravel in the South East due to preferential use of rock in concrete. However, the impact is small and concrete does not appear to be the main end use which would explain the rising proportion of rock used in the region. A more likely explanation for the substitution of crushed rock for sand & gravel may be that demand in the South East has changed over the years in the proportions used for each end use. The implication is that, in a context of rapidly declining demand, purposes which necessarily use sand & gravel (or tend to do so) have declined relative to those for which rock is more suitable. Unfortunately, information on end uses by region is not available from the AM Surveys to review this.

7.41 **The data are insufficient to allow a full analysis of the role of substitution by imported crushed rock for South East sand & gravel specifically in the concrete market, but the following conclusions can be drawn:**

- **a possible cause of the substitution since 1989 may be a change in demand in the South East, away from end uses which necessarily or preferentially use sand & gravel, but the information to examine this is not collected;**
- **the trends in the use of crushed rock and sand & gravel are set against a background of rapidly declining demand in the South East since 1989, and particularly between 2001 and 2005: this has hampered the analysis of substitution and may in itself be part of the explanation for the choice of the two material types, particularly if demand for each end use has not declined at the same rate.**

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