

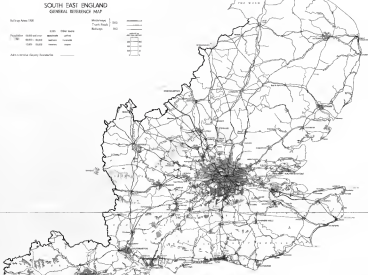
SOUTH EAST ENGLAND
GENERAL REFERENCE MAP

Scale Area 1:50,000

Population	100,000 and over	50,000 and over	25,000 and over	10,000 and over
Urban	Urban	Urban	Urban	Urban
Rural	Rural	Rural	Rural	Rural

All other towns (black dots)

Highways
Trunk Roads
Main Roads



The nature of the problem

THERE are expected to be at least 3½ million more people living in South East England by 1981; it might prove to be more. Such an increase will present formidable problems for what is already the most rapidly growing part of the United Kingdom. This report explains why such a large increase should be planned for and suggests the various ways in which the planning of it could most effectively be done.

2. A good deal has been written recently about 'the drift to the South'. It is essential to recognise from the start that much the largest single element in the population growth of the South East is natural increase—excess of births over deaths in the South East itself. Similarly, the rapid rate of employment growth in the South East is not caused by jobs moving from the north, but through differing rates of growth—more new jobs being created in the South East than in other parts of the country.

3. Population is growing in every major region of England and Wales, though in the South East it is growing disproportionately because the area's economic and social circumstances are particularly favourable to growth. This produces two

related problems: for the South East itself, further overcrowding and congestion, particularly in London and the ring surrounding it; for other parts of the country, a loss of economic opportunities.

4. The second problem is not one that can be dealt with in this Study; but the work has been done on the assumption that it will continue to be the Government's policy to channel away economic growth from the South East to other parts of the country and that, in consequence, the growth in the South East will be at a lower rate than if current trends were projected.

5. Part One of the Study shows why it is considered prudent to plan for a population increase as large as 3½ million and considers some special



problems in London. Part Two proposes a broad strategy to be followed in planning for this population, and suggests ways and means. Some of the broad estimates and assumptions made

for the purposes of the Study require extensive statistical illustration; this, and material about water supplies, has been gathered together in Part Three.

Object and scope of the Study

THE main purposes of the Study were explained in the White Paper, *London—Employment: Housing: Land*¹, which was presented to Parliament in February 1963:

'The Government recognise that the need to match jobs, land, transport and housing over the next 20 years in London and South East England calls for a regional plan. . . . The regional study is examining the growth and movement of population in the South East, including overspill from London, and related employment and transport questions. It will examine the need for a second generation of new and expanded towns which would provide both houses and work for Londoners, well away from London itself, and draw off some of the pressure on the capital.'

2. A primary aim of the Study is to give the local planning authorities of the South East a framework within which to fit their development plans. They have the initial responsibility for allocating land for all foreseeable needs—for houses, shops, schools, industry and so on—within their areas over a period of 20 years, with a review every five years to keep their plans up to date.

3. But, though land has to be allocated locally, some of the most important issues which come into the calculation of the need are more than

local ones—in particular, population, employment and communications.

4. Population change comes partly from migration, and partly from natural change—the balance of births and deaths. Migration movements are extremely complex. There is local movement both within and across local planning authority boundaries; regional movement; overseas migration; migration for work; migration for retirement. Local planning authorities need guidance on how these movements will affect

¹Cmnd. 1952 (H.M.S.O., 2s.), subsequently referred to in this Study as 'the London White Paper'.

them so that they can make realistic plans. Even natural change cannot be calculated locally; national trends in the birth rate and in household formation have to be taken into account. Furthermore, the migration movements themselves modify the local balance of births and deaths.

5. The nature and extent of probable changes in employment can also have a profound effect on future population and on the location and nature of land needs. Here too, national trends and policies will influence local calculations.

6. It is the same with communications, which today play a vital role in planning decisions. Development of the motorway network, for instance, and improvements to the main road system obviously influence the rate of growth of existing towns and are among the decisive factors

in choosing the places for new towns and the towns to expand. These are all national developments, as are changes in rail communications, port developments and new airports.

7. Above all, it is necessary to look at the problems of the area as a whole and in a national context. No single planning authority can cope with London's overspill. No single planning authority can hope to identify for itself all the complex effects of migration and employment growth, and to find solutions within its own borders. The problems have to be presented as a whole so that we can be sure that the solutions, the different elements of which will have to find local expression, measure up to the total need. For this growth and movement of population presents problems from which the South East cannot escape.

Scope of the Study

8. The period taken for the Study is 1961-81, and it seeks to measure the changes likely to occur within that period. There is nothing critical about these dates. 1961, a census year, makes a good statistical base-line; and 20 years is the period commonly taken for long range land use planning.

9. The area examined for the purpose of the Study is the area from the Wash to Dorset. In character it ranges from the congested centre of London to remote rural areas where little change is to be expected. London lies at the heart of the problems of the South East, but the wider area was chosen because much of it comes strongly under the influence of London. To the north west the area is bounded by the vigorously growing regions of the East and West Midlands, while to the east and south the coast makes the natural boundary. For statistical purposes the most convenient area includes Dorset and the whole of the

three standard regions, London and South Eastern, Eastern, and Southern, adopted by the Registrar General for the Census. But, in looking for solutions, the possibilities offered by places further afield have not been overlooked; some of the towns suggested for large scale expansion are in fact outside the boundaries of the South East as defined for the purposes of the Study.

10. There are several important subdivisions of the region. The most important is the London¹ conurbation itself. This is the almost continuously built-up area, with over 8 million inhabitants, lying *inside* the metropolitan green belt. The Study also refers to the small central area (a little more than the area bounded by the main line railway stations) where much of the recent growth in office employment has been concentrated (see Fig. 16, page 37).

11. A much larger area than the conurbation is dominated by the employment offered by the

¹When this Study refers to 'London' without qualification, the London conurbation is meant.

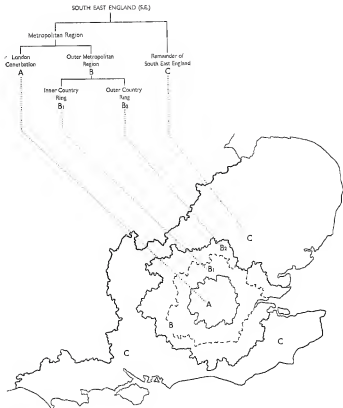


Fig. 3. Subdivisions of South East England
(see Appendix 2, Tables 2-6)

capital and comes under the pressure of the intense demands thus created for more housing. The area where this influence is most strongly felt extends over a radius of about 40 miles from Charing Cross, and is known as the metropolitan region. It contains 70 per cent of the population of the South East and has had 75 per cent of the employment increase over the last seven years. 4½ million people live in the outer metropolitan region (that is to say, the metropolitan region less the conurbation). This is a crucial part of the South East. It contains a good deal of the area's growing industries and population. It also contains nearly all of the existing metropolitan green

belt and the green belt extensions proposed by the planning authorities, as well as the first generation of new towns for London. It is in this ring that most London commuters will henceforth have to look for homes.

12. The main subdivisions of the South East are shown in Fig. 3. The general reference map in the pocket at the end shows the main features of the Study area on a larger scale (about 10 miles to 1 inch). In the chapters that follow, references are made to other broad divisions of England and Wales—Northern England, the Midlands, the South West and Wales. These areas are shown in Fig. 2 (facing page 1).

Population growth in England and Wales

UNTIL recently, land use planning was based on the belief that the population level of England and Wales would be static or nearly so and, indeed, that there might even be a fall in population towards the end of the century. Concentration in the South East (particularly in the built-up area of London) was recognised as a problem well before the war, but both the Barlow Report¹ and the Abercrombie Plan for Greater London² assumed that it was *distribution* of population and employment, rather than *growth*, that had to be dealt with. They were right on the evidence then available; and distribution is still a major problem. But there has been a dramatic change in the birth rate, and it is clear now that the consequences of growth have to be planned for as well.

2. As already explained, population changes stem from two main causes: natural change, representing the balance of births over deaths; and migration, which covers many different kinds of population movement. The changes that have taken place in England and Wales and within the South East during the period 1951-61 are shown in the figures on the following three pages. Fig. 4 shows the changes due to natural

increase; Fig. 5 those due to migration; and Fig. 6 the total changes.

3. The total increase in England and Wales over the period was more than 2½ million, of which 2 million was natural increase and just over a quarter of a million net immigration (the balance was due to the gain to the civilian population resulting from reduction in the size of the armed forces).

¹ *Report of the Royal Commission on the Industrial Population* (Cmd. 6153), 1940 (H.M.S.O., 14s.).

² *Greater London Plan*, 1944.

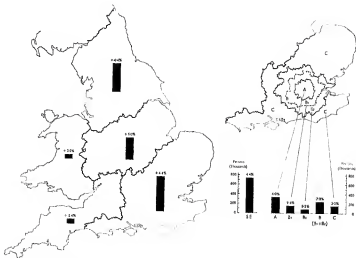


Fig. 4. Civilian population: natural increase: 1951-61

Volume of change is represented by the height of the columns; percentage growth is given in figures at the head of each column. The total natural increase in England and Wales as a whole was 1,975,000 or 4.6% (see Appendix 2, Table 7)

Natural increase

4. The trend of natural increase of population has undergone a striking change in recent years. The annual number of live births had averaged about 600,000 in England and Wales during the 'thirties and seemed then to presage a static or even a declining population. As was to be expected, it rose sharply at the end of the war to a peak of 881,000 in 1947.

5. At that time the Registrar General, in making his first population projections for planning purposes, assumed that there would be a sharp

fall from this peak; but his resultant projection for the period to 1971 did not, and indeed at the time could not, foresee the change in the birth rate which took place from the middle of the 'fifties on (see Fig. 12, page 20).

6. The annual number of live births did in fact fall more or less as expected in the early 'fifties and reached a nadir of 668,000 in 1955. From then onwards a wholly unexpected rise took place, which is still continuing. In 1962, the last year for which figures are available, the number

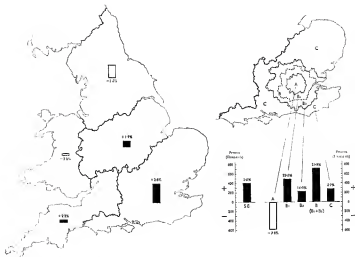


Fig. 5. Civilian population: estimated net migration: 1951-61

Volume of net gain or loss by migration is represented by the height of the columns; percentage migration is given in figures at the head of each column. The total estimated net migration gain in England and Wales as a whole was 287,000, or 0.7% (see Appendix 2, Table 7)

was 839,000, the highest for any post-war year except 1947 (see Fig. 7).

7. This increase will have a very big effect on land use planning. The Registrar General's population projection in 1948, on which the first round of local planning authorities' development plans was based, supposed a civilian population of England and Wales in 1971 of 45.28 million—a natural increase of about 2 million during the two decades 1951-71. But, between 1951 and 1961, natural increase in England and Wales,

only marginally influenced by net inward migration from Scotland and overseas, came to just under 2 million, or *virtually the 20-year expected increase in the first 10*. In other words, the volume of natural growth during the decade 1951-61 proved almost twice as large as had been originally expected.

8. The projections for England and Wales are revised annually. During the last 10 years these revisions have shown an upward trend, and the latest takes full account of the rise in births

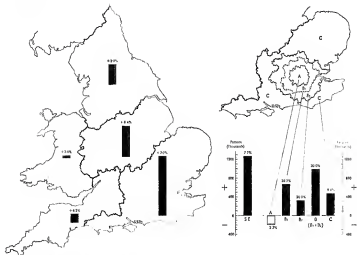


Fig. 6. Civilian population: total change: 1951-61

Volume of change is represented by the height of the columns; percentage change is given in figures at the head of each column. The total civilian population increase in England and Wales as a whole was 2,583,000, or 6.0% (see Appendix 2, Table 7)

since 1955. Inevitably there is a considerable time-lag between revising the projections and incorporating the revisions in development plans. Consequently most current plans do not yet provide adequately for the likely natural growth of population.

9. The birth rate continues to rise, marriages take place earlier and couples tend to start having their children earlier. The wives of post-war marriages are still generally of child-bearing age, so it is too early to draw firm conclusions about the average number of children in families. But

the general effect of these trends is to speed up the whole reproductive cycle, and to build in more population growth for the future. In other words, the length of a generation is shortening and it is becoming steadily more likely that the parents of today will live to see their great-grandchildren.

10. Forecasts of natural increase for the future have to take account of these trends. The next detailed projection for planning purposes, expected in 1964, will be based on the detailed demographic data made available by the 1961

Census. The latest annual projection issued by the Government Actuary indicated a natural growth of the population of England and Wales of about 6 million for the period 1961-81; only 15 years ago, the natural increase forecast for a 20-year period was 2 million. The disparity shows how the prospects have been revolutionised by the rapidly increasing birth rates.

11. That is not the end of the story. Further big population increases are expected after the end of the period covered by this Study; in the last 20 years of the century, the rate of growth is expected to be even higher. The projections of natural growth published in April 1963,¹ were

¹Registrar General's Quarterly Return for England and Wales, No. 456, 4th Quarter, 1962 (Appendix E).

based on the assumption that there would be 853,000 live births in 1962-63, an annual average of 870,000 in the years 1963-67, with a gradual increase thereafter to 1,130,000 live births annually at the end of the century (see Fig. 7).

12. These figures of natural increase are in terms of persons. It is not at present possible to produce useful projections of the growth of households, because the household structure of the existing population will not be accurately known until the full results of the 1961 Census are available. But between 1951 and 1961 the number of households grew by 12 per cent while the civilian population increased by only 6 per cent; a con-

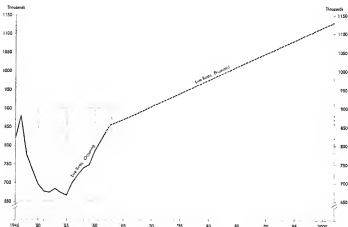


Fig. 7. Live births 1946-2002

The continuous line shows the trend of annual births in England and Wales during the years 1946-62 (see Appendix 2, Table 10); the pecked line represents the estimated future trend derived from the Government Actuary's latest population projection covering the period 1962-2002 (see paragraph 11)

tinuation of this trend would add further to land needs because of the increased demand for separate dwellings. There is the further point that there will be strong household growth in the

period of the Study as a consequence of the high national birth rate just after the war and the return to a rising trend in the mid 'fifties.

Migration

13. In addition to this natural increase, some further growth of the population of England and Wales by immigration is likely during the period of the Study. During the years 1951-61 the net gain from this source amounted to rather more than a quarter of a million (0.7 per cent of the indigenous population). This was made up of two components: net immigration from overseas, and net immigration from other parts of the United Kingdom. The relative sizes of these two components can only be guessed at, pending publication of the relevant part of the 1961 Census. It is clear, however, that there have been steady net movements of population from Northern Ireland and Scotland into England and Wales throughout the period. With overseas migration, there was a sharp change of trend during the decade. In the early years, there was probably a small net loss of population to the older Commonwealth countries, a loss that was sharply overtaken by heavy immigration, mainly from the West Indies, India and Pakistan, in the late 'fifties and early 'sixties.

14. In 1961-62, there was an estimated net

migration gain of 226,000—nearly as much as in the whole of the preceding decade. But this was an exceptional year—the last of unrestricted movement before the Commonwealth Immigrants Act took effect. Forecasts for the future are necessarily very tentative, as international movement is sharply influenced by economic and political changes. But it is clear that, given continued national prosperity, further immigration, though at a reduced level, is likely from overseas, quite apart from movement from Scotland and Northern Ireland. The national estimate is not of crucial importance for the South East, for internal as well as international movements must be taken into account there. But the latest official estimate is that England and Wales may expect to gain 1 million in population by net immigration during the period of the Study, over and above the 6 million by natural increase.

* * * * *

15. Thus, over the period 1961-81, the population of England and Wales is likely to grow by 7 million from a starting figure of 45.9 million.

Employment in the South East

THE following table shows the population changes which have taken place in the major regions of England and Wales over the last 10 years and illustrates the close relationship normally existing between changes in employment and population.

Employment and migration

TABLE I

	<i>Employment increase (per cent of employees) 1952-62</i>	<i>Migration gain or loss (per cent of total population) 1951-61</i>
Northern England	4.0	-2.0
Wales	4.4	-2.0
Midlands	12.4	+1.7
South West England	13.3	+2.2
South East England	14.9	+2.5
Total (England and Wales)	10.3	+0.7

2. These changes reflect the comparative prosperity of the south and the midlands on the one hand, and the comparative lack of employment

growth, on the other hand, in the north and (at any rate in the earlier years) in Wales. All these major regions enjoyed population increases as a

result of natural growth: but Wales lost 50,000 migrants, and Northern England over a quarter of a million. The Midlands and the South East were able to absorb not only their natural increase, but immigrants as well—413,000 in the South East. The link between employment growth and population increase is illustrated by the fact that during the 10 years 1952-62, the number of employees in the South East grew by over 1 million. This represents an increase of almost 15 per cent, or more than twice the rate in the rest of England and Wales (7.4 per cent). Fig. 8 shows the differing rates of employment growth in the major divisions of the country during the period 1955-62.

3. In the future, as in the past, the South East's share of the total national population growth will be strongly influenced by the structure of its economy. The forces making for increases in population and employment in the South East are very strong. London itself naturally dominates the whole area and is a tremendous magnet. Its geographical advantages have marked it out as the natural capital since Roman times. For centuries it has been not only the seat of Government and justice, but the biggest port in the country, the focal point of the national communications network, and the centre of national and international commerce, as well as a main industrial area.

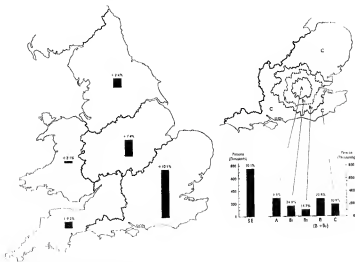


Fig. 8. Increases in employees 1955-62

Volume of employment growth is represented by the height of the columns; percentage increases are given in figures at the head of each column (see Appendix 2, Table 15)

EMPLOYMENT, 1962, IN INDUSTRIES EXPANDING 1959-62

GROUP I
20% and over Expansion

Number Employed.....0.6 M.

GROUP II
10-19% Expansion

.....1.9 M.

GROUP III
0-9% Expansion

.....3.7 M.

EMPLOYMENT, 1962, IN INDUSTRIES CONTRACTING 1959-62

GROUP IV
0-9% Contraction

Number Employed.....1.3 M.

GROUP V
10% and over Contraction

.....0.6 M.

TOTAL EMPLOYMENT, 1962, IN ALL FIVE GROUPS
OF MANUFACTURING INDUSTRY

- S.E. South East England
M Midlands
W Wales
S.W. South West England
N Northern England



Total Employed.....8.1 M.

Fig. 9. Employment structure 1962, analysed by reference to past employment changes

Manufacturing industries have been arranged in five groups, according to the percentage changes in the total labour force employed by them nationally during the three years, 1959-62. The five smaller circles show the distribution of the total labour forces engaged in each of these five groups of manufacturing industry in 1962. The large circle below shows the distribution of the total labour force engaged in all manufacturing industries in 1962 (see Appendix 2, Table 20)

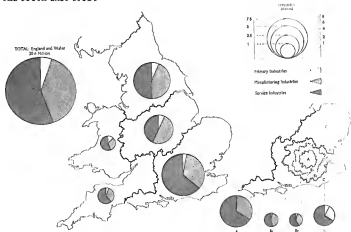


Fig. 10. Employment structure 1962

The total number of employees is represented by the area of each circle; the sectors indicate the proportions employed in primary, manufacturing and service industries (see Appendix 2, Table 17)

Employment structure

4. With the development of motor transport and of power from oil and electricity, many of the newer industries are attracted by easy access to ports and airports, by proximity to the mass markets offered by the big centres of population and by the supply of scarce technical staff.

5. Northern England and the South East each provide employment for almost exactly the same number of workers in manufacturing industry (2½ million). But, when the different categories of industry are examined, the results are very different (see Fig. 9). In the country as a whole the industries which show the strongest employ-

ment growth (i.e. those which have increased their national labour force by more than 20 per cent over the last three years) employed over half a million people in 1962. But more than half this employment was found in the South East, and little more than a fifth in Northern England. At the other end of the scale, 54 per cent of the employment in the industries declining most sharply (loss of more than 10 per cent in the national labour force) was in Northern England, and only 22 per cent in the South East.

6. This detailed analysis was based on a breakdown of employment based on the Minimum

List Heading classification¹, and it is impossible to extend this analysis back over a longer period. Special statistics, however, have been prepared to show changes in the numbers employed in all forms of employment by the broader Industrial Order classification for Great Britain as a whole over the ten-year period 1952-62. This more general analysis similarly reveals an uneven distribution over England and Wales of the strongly growing industries. In terms of total employment in 1962, 40 per cent of all jobs were located in the South East, and 30 per cent in Northern England. For those Industrial Orders showing the strongest employment growth in the decade, about 45 per cent of employment was in the South East and less than 28 per cent in Northern England. Conversely, 40 per cent of employment in those Industrial Orders showing any decline in their national labour forces was in Northern England and only 29 per cent in the South East (see Appendix 2, Table 19).

7. This difference in industrial structure has been reflected in current rates (1959-62) of increase in manufacturing employment in the South East. The rate of increase in England and Wales was 5 per cent; but in the South East it was 6.6 per cent, and in Northern England only 1.5 per cent (see Appendix 2, Table 18).

8. The pattern of other forms of employment also favours growth in the South East, as Fig. 10 shows. Agriculture and mining and quarrying are providing a diminishing amount of employ-

ment; but the South East has a small share of these industries. They provide 2.8 per cent of total employment in the South East, as against 5.4 per cent in England and Wales as a whole. Service industry² (transport, distribution, building, commerce, entertainment, etc.) is growing faster than other forms of employment. This is most strongly represented in the South East (64 per cent of total employment as against 55 per cent for England and Wales as a whole).

9. The general picture, therefore, is of an employment structure which already contains the seeds of much further growth. If additional jobs were created in the South East at the same rate as they have been during either the ten years 1952-62 (over 1 million) or the seven years 1955-62 (over $\frac{2}{3}$ million), there would be 2 million extra workers by 1981: equivalent to a population increase of about 4 million. But if the rate of increase over the last three years (1959-62) were to be sustained, there would be 3 million extra workers, corresponding to a population increase of 6 million, by 1981. These employment increases in the short term reflect normal fluctuations in trade and prosperity which are unlikely to be maintained over a long period. But, given that a main aim of national policy is economic growth and the achievement of an annual 4 per cent growth rate, there is nothing inherently improbable about the lower figures. These reflect conditions over the longer periods 1952-62 and 1955-62, which included bad years as well as good ones.

Effects of Government action

10. The rate of growth in the South East is susceptible to Government action, in the form of direct control over the location of new industry

and of measures to build up the economic strength and attractiveness of the less prosperous regions. In considering what allowance should

¹ *Standard Industrial Classification*: Consolidated edition 1963 Central Statistical Office. (H.M.S.O., 3s.).

² Throughout this Study the term 'service industry' is used to cover Industrial Orders XVII to XXIV of the Standard Industrial Classification, i.e. Construction; Gas, Electricity and Water; Transport and Communication; Distributive Trades; Insurance, Banking and Finance; Professional and Scientific Services; Miscellaneous Services; and Public Administration and Defence.



Fig. 11. Industrial development 1952-61

The estimated additional employment provided in new factories and extensions built in 1952-61 is represented by the area of the circles. The estimates relate only to buildings for which industrial development certificates were required (see Appendix 2, Table 23)

be made for this, it has to be recognised that the current employment increases in the South East have taken place over a period during which there have been vigorous efforts to divert some part of the growth in manufacturing industry to other parts of the country. Industrial projects new to the South East are unlikely to receive industrial development certificates from the Board of Trade; and even extensions to existing factories are not approved unless the Board of Trade are satisfied that the work could not be transferred out of the area.

11. Industrial building authorised by the Board of Trade, and completed between 1952 and 1961,

was estimated to provide 203,900 additional jobs in the South East, representing 2.8 per cent of all the employment there in 1952. During the same years completions for Northern England provided 202,700 new jobs, or 3.4 per cent of the total in 1952 (see Fig. 11). For Wales, the percentage was as high as 4.8 per cent. In the London conurbation it was only 1.0 per cent.

12. But the Board of Trade's control covers only manufacturing employment, and much of the growth is in the service trades. A good deal of this employment (e.g. retail trade, communications, and personal services of one sort or another) is tied to the population it serves.

Distribution of growth in the South East

13. It is not only the total amount of employment growth in the South East that presents problems; both the distribution of this growth and its composition are uneven. Over the period 1955-62, over three-quarters of a million additional jobs were created in the South East as a whole; this represented an increase of just over 10 per cent, as compared with 6.8 per cent for England and Wales. In London itself, the rate of increase (6.6 per cent) was actually below the national average; in the South East outside the metropolitan region it was 10.9 per cent; but in the outer metropolitan region there were well over a quarter of a million extra jobs—an increase of over 20 per cent.

14. Although the percentage increase in the conurbation was comparatively low, in terms of numbers it was large—an increase of nearly 300,000. Very little of this growth was in manufacturing industry; five out of every six additional jobs were in the service trades, including com-

mercial employment (see Appendix 2, Table 22). Much of the new employment was concentrated in the small central area and, although there are no separate statistics, it seems likely that the rate of growth within this small part of London was well above the national average.

15. The size and composition of the employment increase in the outer metropolitan region reflected the policy of decentralisation of London by the creation of new towns, and the drastic curbs which were placed on industrial expansion in the conurbation both by Government controls and by lack of space to grow. In this ring around London manufacturing industry is far more strongly represented than in the South East as a whole (41.7 per cent of all employment against 33.3 per cent); it is even above the average for England and Wales (39.2 per cent). During the period 1955-62 three-fifths of the employment increase in the outer metropolitan region was in manufacturing industry.

Future growth in the South East

16. All the factors point towards the conclusion that there is unlikely to be any sudden decrease in the numbers of jobs being created in the South East. Special problems are presented by the

concentration of growth in office employment in the very small central area of London, and by the rapid rate of industrial growth in the outer metropolitan region.

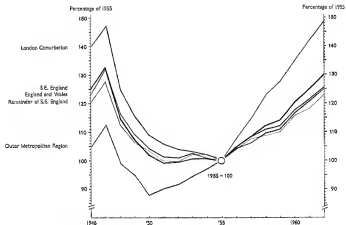


Fig. 12. Live births 1946-62 as a percentage of live births in 1955

1955 marked the turning point in post-war birth trends in England and Wales; the number of live births, 667,800 was lower than in any other year since the war (see Appendix 2, Table 10)

Population growth in the South East

IT was said in Chapter 3 that England and Wales as a whole can expect a population increase of 7 million during the period 1961–81, 6 million by natural increase and 1 million by net immigration. The next step is to estimate the share of this growth that will fall to the South East. It is necessary to emphasise that the prediction of future population changes, over a period as long as 20 years, is a hazardous business, and that considerable margins of error are possible. Particularly where migration is concerned, the sources of information are far from adequate. It will be necessary to amend the estimates made from time to time, as more information becomes available (for example, when the migration stream analysis of the 1961 Census is published at about the end of 1964), or as changes of trend become evident. Throughout the chapter, however, where there is a choice of assumptions the one that produced the smallest estimate of growth in the South East has been selected; much higher figures would be produced by the straightforward projection of current trends.

Natural increase

3. In estimating the likely change, the two main components—natural increase and migration—cannot be kept entirely separate. If there is a net balance of migration into a region, there is a

direct addition to numbers. Since the regional total becomes higher, the level of natural increase will also be higher—the more people there are, the more children they are likely to have.

4. But there is an even more important consequence of migration. Migration is usually described in net terms—i.e. the difference between the total moving into and out of a country or a region. It is known that these net totals mask very much larger gross movements which, in a city like London, can make big changes in the population and household structure even though there is no net increase—or even a decline—in the total population. Young people move in to work; older people move out (to other parts of the South East or further afield) to retire. There is a constant rejuvenation of the population, and consequently a rate of natural growth far higher than would be expected if the population were static.

5. Over the last few decades there has been a steady increase in the South East's share of the total natural increase of England and Wales. In the 'twenties, this was 33 per cent; in the 'thirties, 36 per cent. Between 1956 and 1962—the period which saw the reversal of *international* migration trends—it was higher still (39 per cent).

6. If this upward tendency were to continue, the South East could expect to receive well over 40 per cent of the natural increase in England

and Wales over the next 20 years. For the purposes of this Study, however, it has been assumed that the tendency for the South East to increase its proportion of the natural growth of the population at the expense of other parts of the country will be arrested, and that each of the major regions shown in Fig. 2 will hold a higher proportion of its natural increase.

7. On this basis, the natural growth in the South East—that is, the excess of births over deaths taking place in the region—would amount to 39 per cent of the Government Actuary's national projection of 6 million in the period 1961–81, i.e. 2.4 million. The position in other major regions is set out in the following table:

Natural increase 1961-81	TABLE II
	<i>million</i>
Northern England	1.8
Wales	0.2
Midlands	1.4
South West England	0.3
South East England	2.4
Total (England and Wales) ¹	6.1

Factors governing future migration

8. To this estimate of natural growth must be added an estimate of increase by net migration. Some guidance is offered by the total figures of net movement for each region during the decade 1951–61. It is estimated, for example, that the South East gained 413,000 migrants over the 10-year period; but, until the detailed analysis of migration from the 1961 Census is available, it is not known what overall volume of movement produced these net figures, nor, in numerical terms, where the migrants came from or went to.

It is impossible, therefore, to work on the basis that the South East received, for example, so many Scots and so many Northumbrians over the last decade, and to try to work out detailed adjusted figures for the future. This method would, in any event, produce cumulative errors. Indeed, it is not necessary to arrive at such figures for the purpose of the present Study, since the object is to determine the total population for which provision must be made in the South East.

¹The total is higher than the figure of 6 million quoted in Chapter 3 because of the effect of immigration on natural increase.

9. The method adopted has been to consider what *total* rate of migration into the South East appears likely; having regard to the estimate made of immigration into England and Wales as a whole, and making allowance for the fact that the regional studies for Central Scotland and North East England include in their objectives a reduction in the rate of migration out of those areas. In order to make proper allowance for the migration assumptions in these regional studies, and for the more general objectives of Government policy—to secure a more even spread of prosperity and a more even use of resources over the country as a whole—the present Study assumes that future net migration gain in the South East will constitute a smaller proportion of the national total than in the last decade.

10. Past experience shows that, because of inter-regional movement, net migration into the South East has exceeded, by a considerable margin, the net migration into England and Wales as a whole. During 1951–61, the net migration gain for the South East was 413,000, as against 287,000 for England and Wales.

11. The net gain for England and Wales in the period 1961–81 has been estimated at 1 million. If past ratios were preserved, this gain of 1 million would imply a net migration gain of 1·4 million in the South East; but such an estimate would be incompatible with the assumption that a more even distribution of prosperity should lead to a proportionately smaller allocation of migration gain to the South East.

12. It would, on the other hand, be unrealistic to assume that the amount of migration gain in the South East over the next 20 years will be no larger than the mean rate between 1951 and 1961 (which would give a figure of 826,000) for there were clear signs that, during the last decade, the rates of immigration, both into England and Wales as a whole and into the South East, were increasing, partly as a result of the change in balance in Commonwealth migration. The rate of employment growth in the South East has also been faster than in the rest of the country; in the last three years, the rate of increase was double that in the preceding three years. Allow-

ance must also be made for migration which is not economic in its motive—migration for retirement. Numbers of elderly people come to the South East, many of them to seaside resorts. This type of migration will certainly continue, and may well increase.

13. If nothing were to change, these factors would point to a sharp increase in the rate of net migration into the South East over the next 20 years. There must be set against them the considerable efforts being made to stimulate the economies of the northern regions, to divert a greater proportion of the expanding industries of the South East and to provide better housing and more modern towns in the north. But it will take time before the full effect of these measures is felt. If the economic incentive to migration is to be removed, the new industries in the north will not only have to provide work for those now unemployed; they will have to offset future losses of employment in the older, declining industries, and produce jobs for the strong natural increase in the population of these regions.

14. The creation of new jobs in the north is not expected to have much effect on retirement migration; nor will it necessarily diminish the rate of overseas migration into the South East. Indeed, if the supply of migrant labour from the north is reduced, and if employment growth of a kind that cannot be diverted continues in the South East, employers may seek more workers from elsewhere.

15. Allowing for all these factors, it has been assumed that net migration into the South East over the period of the Study will amount to rather more than one million persons (say 1·1 million). This estimate lies roughly mid-way between the two extreme points (826,000 and 1·4 million) mentioned above.

16. Most of the migrants will be men and women of working age, some with their families, but perhaps as many as 250,000 might be elderly people coming for retirement. But, pending publication of data from the 1961 Census, these subdivisions are highly speculative, and the figure quoted for retirement migration may well prove to be too high.

The basis for planning

17. Thus, the total population growth to be dealt with in the South East in the period 1961-81 is $3\frac{1}{2}$ million; a little over 1 million migrants, a little less than $2\frac{1}{2}$ million born in the South East.

18. The distribution of the additional population over the South East forms the main subject of the later parts of this Study. Of the natural increase, 1 million is likely to take place in the London conurbation, 870,000 in the outer metropolitan region, and only 475,000 in the whole of the rest of the South East, on the assumption that each of these areas continues to maintain its present proportion of the natural increase in the South East.

19. Two questions may well be asked. What confidence can be placed in population forecasts for the future, when they have gone so badly astray in the past? And is it not an admission of defeat to plan for so large an increase in the South East?

20. The answer to the first question is that we must be alert for signs of change and ready to review plans as the passage of time brings new evidence to support or contradict the assumptions made. On the other hand, while many of the calculations are subject to a wide margin of error, most of the main trends underlying them are now well established. Mistakes in the forecasts are therefore best considered as errors of timing rather than of quantity. In other words, it is not so much *whether* a particular level of population will be reached as *when*.

21. The second question is a vital one, and the answer to it lies in the main purpose of this Study. This is to give guidance on the amount of provision that needs to be made for likely population growth in the South East. This means primarily the allocation by the local planning authorities of sufficient land for development, and, to the extent that this is necessary, the planning of new towns and town expansions. If this provision is to have real meaning it must be

based on realistic estimates of the amount of growth that is likely to take place in the South East, and not on more comfortable assumptions that may quickly be falsified by events. It takes several years before the idea of a new town in a given area can be translated into homes, factories, shops and offices on the ground. It is much easier to slow down the execution of plans, if the need develops later than expected, than to be forced into a crash programme because the needs were under-estimated.

22. Similarly with land allocations. Through no fault of the planning authorities, the current development plans fall well short of real needs, and many of them have not yet been revised to meet the requirements of the 'seventies. If these deficiencies are not corrected—and corrected with a good margin of tolerance for the future—artificial land shortages are likely to be created, land prices driven up higher, and the planning machine overwhelmed.

23. Planning for a proper distribution of the future population of the South East is not inconsistent with the effort to reduce the flow of migration from the north. For the north such a reduction is vital; but it will not alter the general scale of the need to allocate land for development in the South East. As was shown in Chapter 3, if employment growth were to continue at current levels, very heavy population increases could be expected. There can be little doubt that, over the 20-year period, growth in the South East will call for an increase in the labour force corresponding to a population growth of at least $3\frac{1}{2}$ million. The region is therefore likely to retain the whole of its natural increase and to attract the balance from one source or another.

24. The indications are that if the forecast of a population increase of $3\frac{1}{2}$ million during the period of the Study proves to be wrong, it is more likely to be an under-estimate than an over-estimate.

London

THE heart of the South East problem lies in London and the ring surrounding it. It is this metropolitan region that contains the greatest concentration of population and the greatest amount of employment growth in recent years. This limited area is likely to have a high percentage of the future growth in the South East.

2. It is here also that land pressures are at their greatest. There is a strong natural increase in the present population both of the conurbation and of the outer metropolitan region; and the growth of service employment (including office jobs) in London, and of manufacturing employment in the rest of the metropolitan region, tends to pull more workers in. Thus a keen demand for houses and housing land is set up. The conurbation itself is virtually built up, and there are only limited possibilities of adding to the total stock of housing in London over the period of this Study. London cannot meet all its own housing needs, and some part of the solution must be found in the outer metropolitan region. But this area in turn has its own problems of growth; and it contains the approved metropolitan green belt and the extensions to it which have been proposed by the local planning authorities.

3. This chapter deals particularly with the housing demands of London, and examines the ways in which they can, in part, be dealt with inside the conurbation. On the basis of this

calculation of housing need and housing capacity, it makes an estimate of London's overspill—the number of people who will need homes elsewhere—in the period of the Study.

Some history

4. People have been saying that something ought to be done about London for nearly 400 years—the first legislation on the subject goes back to Elizabeth I. But London has not stood still; the spread of the built-up area over the last century and a half is shown in Fig. 13. Before the war, tentative steps were taken towards the preparation of a plan for London and the surrounding country, and the idea of a green belt took shape.

5. Towards the end of the 'thirties, with the double pressure of unemployment and the approach of war, the economic and strategic dangers of allowing so much industry and population to silt up in the corner of England nearest Europe caused the Government to appoint a Royal Commission, under Sir Montague Barlow, to investigate the problem.

6. The Commission, which reported in 1939, recognised that the drift of population and industry to the South East was a problem demanding attention. They recommended, among other things, that its effects should be mitigated by restricting industrial building in London and the Home Counties, redeveloping inner London and dispersing industry and population away from the London area.

7. When Sir Patrick Abercrombie came to prepare his Plan for Greater London, he made two assumptions—and they were very reasonable ones to make at the time—which have since been falsified by events. He assumed that no new industry would be admitted to London and the Home Counties except in special circumstances, and that the population of the area would not only not increase, but would be reduced.

8. The first assumption went wrong because nobody then foresaw that, although a tight check would be maintained over the growth of manufacturing industry, the big employment growth in London during the 'fifties was to be in forms of employment not subject to industrial location control—in service industry and, in particular, in office employment. This change in emphasis from factory floor to white collar work is one of the most important features of post-war London. In 1954, the number of factory workers in the County of London was actually well below the pre-war figure—about a quarter of a million less—and little of the growth that has taken place since then has been in manufacturing industry. The turning point came in the mid 'fifties, which saw the beginning of the office building boom in central London. Over the last decade well over 150,000 more office jobs have been created in the central area alone. Over the three years 1959–62, nearly 200,000 new jobs were created in the conurbation as a whole, and over four-fifths of these were in service employment (which includes office jobs).

9. The second assumption was overtaken by the unexpected surge in the national birth rate which started in 1955. It has also been affected by migration to London for work. Numerically, this element has not been large, and, in the conurbation itself, is balanced by the outward movement of other people going to work elsewhere, looking for homes in the commuter belt, or retiring. But, as has been shown in Chapter 5, the effect of migration turnover of this kind in London is to increase the rate of *natural* growth.

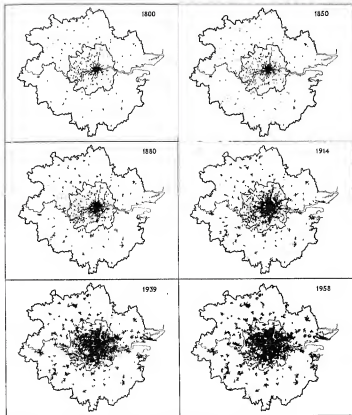


Fig. 13. The growth of built-up areas in the metropolitan region 1800-1958

The 1958 map is an extract from Fig.1; the remaining five maps show the extent of these built-up areas at each of the preceding dates

The green belt

10. Meanwhile, the London green belt was taking shape. The history of the green belt, the machinery for setting it up and extending it, and development control policy within green belts are all fully described in the booklet *The Green Belts*¹, published in 1962. The conception of a green belt around London owes much to this same idea of a static population. A green girdle could be flung round the capital, some of its population and industry moved out to new towns beyond it, and the elbow room thus created used to improve living conditions in the conurbation. Specific proposals for a green belt about five miles wide around London were made in the Abercrombie Plan. These were embodied in the development plans of the local planning authorities, and, in the process, the belt was widened to between six and ten miles. This ring covers 840 square miles and is known as the 'approved' green belt, since it is incorporated in development plans approved by the Minister of Housing and Local Government. The local planning authorities have, in addition, made proposals for the extension and strengthening of the green belt. These proposals, some of which have been submitted to the Minister as formal amendments to development plans, but not so far approved, would, together, add another 1,200 square miles to the green belt. (These areas are shown in Fig. 25, page 88.)

11. Within the green belt, there is a presumption

against building that is not tied to uses which belong to open countryside—for example, agriculture, sport and recreation. Furthermore, the intention is that these restrictions should be permanent, and that a green belt, once its boundaries have been firmly fixed in an approved development plan, should remain for as long as can be foreseen. By this means, the physical growth of a large built-up area like London can be checked, and towns can be stopped from merging into one another.

12. Thus, the early plans under-estimated the needs which were to arise and the establishment of the green belt prevented the satisfaction of these needs by the traditional—and in many places highly damaging—method of peripheral spread. Some of the deficiencies were made good, because, by the time the planning authorities in the metropolitan region started to make their plans, the doctrine of static population had been modified a little. More important, however, Abercrombie had demonstrated the need for a coherent policy of getting people and work out of London. This part of the plan was implemented by the creation of eight new towns near London, with an eventual population of over half a million, and by the sanctioning of schemes for the accommodation of nearly a quarter of a million people in expansions of existing towns (see Fig. 14); and there was also much voluntary movement out of London.

More households

13. Other developments have added to the land needs of London and indeed of the country generally. One is the gradual change which has

been taking place in the average size of households requiring a separate home. This is a long term trend: and one reason for it is that most

¹*The Green Belts*. Ministry of Housing and Local Government (H.M.S.O., 4s.).

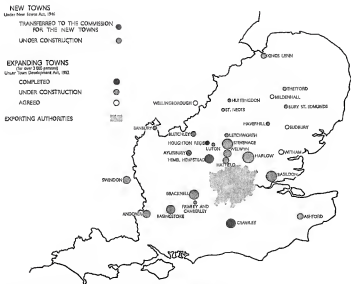


Fig. 14. Existing new towns and town development schemes for London

All new towns, and town development schemes with a planned population increase of more than 2000, are shown, as at December 1963. The planned population increase is represented by the area of each circle (see Appendix 2, Tables 11 and 12)

modern households consist simply of the married couple and their children. With greater prosperity and better housing, young married couples are less likely to live with their in-laws; and more elderly people have their own homes, instead of living with married children. In ten

years, the average size of private households in the London conurbation fell from 3.02 persons to 2.85. What this means is that now, and increasingly in the future, more dwellings will be needed to house any given number of people than in the past.

The motor car

14. Equally important is the growth of motor traffic. More land will have to be given up to the motor car. A garage for every new dwelling and two for some. More parking space. Above all, more and wider roads. All these requirements will eat into land allocations which ten years ago could have been safely left for other purposes. The report of the Hall Group¹ forecast a doubling in the number of cars by 1970 and a trebling by

1980; the impact on London will be considerable. Since then the Buchanan Report² has described the implications of this for the bigger towns; and how it might be provided for. This Study is not directly concerned with the effect of this on London's internal problems of reconciling traffic with civilised living. The point here is that the motor car is likely to be a strong competitor for land in London itself.

London's housing needs

15. For many years now the resident population of the London conurbation has been falling slowly but steadily. This happens in most big cities. There comes a point in the history of a town when the pattern of development changes. The residential areas in the centre become worn-out and have to be replaced. If houses are put back on them, higher living standards usually demand a more spacious layout, with wider streets, more schools, shops and open space. But very often the valuable land on the fringes of the town centre goes over to commercial uses of one sort or another. People choose to live further and further away from the centre, bartering a longer daily journey to work for fresh air and quieter surroundings in the evenings and at week-ends. This kind of thing has been happening on a massive scale in London, with the result that the City is deserted at night and residential uses have been pushed further and further out. Such is the scale of things in London that finding a home on

the outskirts nowadays means going beyond the suburbs, to the green belt and the countryside beyond. Fig. 15 illustrates this pattern of change.

16. During the period 1951-61 London gained nearly 400,000 by natural increase and the return of servicemen to civilian life; yet, during the same period, its population fell by 189,000 (from 8·321 million to 8·132 million). This is because there was a net outward migration of 583,000. Over a quarter of a million people went to new and expanded towns under planned overspill schemes. Some of the remainder no doubt were leaving London for retirement in the country or by the sea, but very many out of the balance of over 300,000 moved out of London to the commuter ring and went on working in London. The population of the conurbation has been falling, even though the number of dwellings in it has increased.

17. During this same period the number of jobs in London was increasing—by nearly a quarter

¹*The Transport Needs of Great Britain in the next Twenty Years*, 1961 (H.M.S.O., 2s. 6d.).

²*Traffic in Towns: A Study of the Long-term Problems of Traffic in Urban Areas: Reports of the Steering Group and Working Party appointed by the Minister of Transport*, 1963 (H.M.S.O., 2s. 10s.).

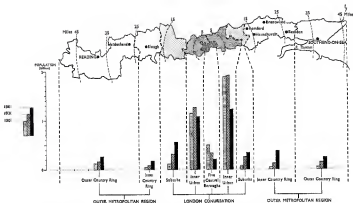


Fig. 15. Population changes in a cross-section of the metropolitan region 1901-1931-1961

The cross-section, between 5 and 10 miles in width, is subdivided into zones made up of aggregates of local authority areas. The columns are proportional in height to the census enumerated populations of each zone at the three dates. The population of the whole cross-section in 1961 was 4,504,000 (see Appendix 2, Table 9)

of a million in the six years 1955-61 alone. The combined effect of this decline in resident population and increase in employment is that London is housing an even smaller proportion of the people who have to work there and, if present trends continue, will need to look more and more beyond its present boundaries for houses and housing land. It is necessary to establish the likely size of these demands; in fact to estimate the amount of overspill population for whom provision of one sort or another must be made.

18. More houses are needed for Londoners for three main purposes:

- (i) to replace the slums;
- (ii) to make good the existing shortage; and
- (iii) to provide for London's population growth.

19. REPLACEMENT HOUSING. While the first of these heads has an important place in the housing programme for London, it has less effect on the calculation of the size of the overspill problem. The reason for this is that the problem is essentially one of replacement. The slum areas being cleared are mostly at high density; but the planners and architects of the local authorities use all their skill to squeeze the utmost from these sites.

20. MAKING GOOD THE SHORTAGE. Very many *additional* houses—requiring land—will have to be built if every separate London family wanting its own home is to have one. As the London White Paper showed, much of the backlog has been overtaken. Since 1951, 300,000

additional dwellings have been provided, and the gap between the number of houses and the number of families wanting them has been reduced to less than half. Nevertheless, much remains to be done. The 1961 Census showed that there were 2½ million dwellings in London, and 2½ million families as defined for census purposes. For the purposes of assessing housing need, the gap is not as great as a quarter of a million, for the 'census' household includes lodgers and others who do not require a separate home. The best estimate that can be made at present suggests that the demand is at least 150,000, and perhaps substantially more, if doubling up and overcrowding in London are to be eliminated.

21. GROWTH IN POPULATION AND HOUSEHOLDS.

Even more houses will be needed to meet the growth in the population of the capital. It was estimated in Chapter 5 that this would amount to about 1 million persons. But, in calculating housing demand, it is not enough to know this;

it is necessary to know how many extra families will have to be provided for. This will be more than a simple division sum would suggest, for more and more households are being formed every year out of the existing population; even if the population of London did not grow at all, more houses would be needed each year to accommodate the increasing number of smaller households which are steadily being formed. One conclusion to be drawn from this is that a higher percentage of small dwellings should be included in the London housing programme.

22. The best estimate that can be made under this head is that, allowing both for natural increase and for the declining average size of households, 400,000 extra dwellings will be needed for population growth.¹

23. SUMMARY. Thus, if these two main needs are to be met (and there are others, as will be seen), 550,000 additional houses will be required during the 20-year period, over and above replacement building.

London's housing capacity

24. How far can these needs be met in London itself? An estimate of this kind can only be a rough one without a detailed study of the land use pattern in the whole of the conurbation, and this is something which must await the setting up of the Greater London Council. The existing development plans of the local authorities are only of limited help, because only one of them—Middlesex—has so far undertaken a review which extends to 1981. Valuable help has, however, been received from all the planning

authorities in the conurbation in the preparation of an approximate estimate of future housing capacity.

25. The outstanding fact is that the conurbation lying inside the green belt is virtually built over, and there is very little land indeed that can be released for house-building. This means that, to an ever-increasing extent, housing gains must be wrung out of redevelopment, a process which is slower, more difficult and more complicated than building on virgin land.

¹It may be asked why no separate allowance is made for migrants. The answer is that, although people do migrate to London for work, the London conurbation (the unit examined in this chapter) suffers a net loss by migration for the reasons that have been explained. But one effect of these migratory movements is to produce a 'young' population in London, and this boosts the rate of natural increase.

26. **HOUSING DENSITIES IN LONDON.** The acute need for more housing for Londoners inevitably leads to the suggestion that this should be provided by stepping up the housing densities in London itself. There are three main types of area that need to be considered. There are the closely packed residential areas of inner London, some of them slums and ripe for redevelopment. There are the outer suburbs, built at low densities between the wars. And, in between, there are the older Victorian and Edwardian houses.

27. It is doubtful whether there can be much housing gain from redeveloping the obsolescent residential areas of inner London at much higher densities. Existing densities are very high, ranging up to 300 persons per acre, and the environmental standards are low. When these areas are rebuilt, some land must be set aside for non-housing uses—schools, shops, wider streets and some open space—in the interests of civilised living. High densities over a wide area, and particularly in the centre of a great city, are likely to produce intolerable living conditions and social unease. In any case, building in inner London is an expensive process.

28. In the low density outer suburbs, there is much more physical scope for redevelopment. There are thousands of acres of land built on at low densities, and even quite modest increases could add greatly to their capacity, if unified sites big enough to warrant comprehensive redevelopment could be obtained. But this will not be practicable for many years to come. Most of these houses were built less than 40 years ago, are owner-occupied and in sound condition. There could be no question of pulling them down during the period of this Study. Such gains as may be possible here will come later.

29. There are, on the other hand, big prospects of increasing the number of dwellings in the older suburbs. Many examples are already to be seen of the successful redevelopment, by private builders, of the sites of Victorian houses standing in large gardens. In some places, several adjoining houses have been bought, and the unified site redeveloped as a whole. Again, without a detailed survey, it is difficult to estimate the further scope

for this. Much will depend on the economics of a particular scheme, and on the possibility of acquiring all the land needed to do a worth-while job. But, as the supply of virgin land diminishes, builders will have an even greater incentive to turn to redevelopment. In recent years, applications for planning permission to carry out work of this kind by private enterprise in London have been running at the rate of 30,000 dwellings annually, and about half of these have been approved by the planning authorities.

30. **SUBDIVISION OF DWELLINGS.** In recent years, too, the number of separate dwellings has been increased by the conversion of older, larger houses. This is a source which, in the nature of things, is bound to become exhausted as suitable properties are converted or are pulled down for redevelopment; but there should still be a substantial gain through this process during the period of the Study.

31. **GENERAL REDEVELOPMENT.** There is one other source of additional housing. Estimates derived from a survey carried out by local planning authorities in 1960 indicated that, in the short term, there might be a gain of about 25,000 dwellings consequential on general redevelopment schemes, after allowance had been made for losses on slum clearance redevelopment. For the future, the available evidence suggests that, while there will be housing gains and losses in individual redevelopment schemes, these operations as a whole may not result in much net change in numbers in the period up to 1981. This is a provisional conclusion which will need to be reviewed from time to time as more information becomes available.

32. **OTHER SOURCES OF HOUSING LAND.** Finally, there has been a continuing search for new sources of land for housing in London. This has met with some success. Valuable additions can be expected from the development of Croydon Airport, the Government depots at Kidbrooke and Woolwich Arsenal; from the London County Council's plans for Eritb Marshes; and from

the surplus land of the British Railways Board. No precise figures can be set against these, because in some instances negotiations are still going on—and there are other possibilities too. But windfalls such as these do not represent a constant and reliable source of new housing land, and will be harder to come by with the passage of time.

33. Moreover, there will be fortuitous losses as well as fortuitous gains. It is inevitable that, over the 20-year period, there should be losses of houses and housing land for other essential uses—new roads, road improvements, schools, technical colleges and many other purposes. The number cannot be estimated, but it will certainly run into tens of thousands.¹ In these circumstances, it seems prudent to set off the uncertain gains against the uncertain losses—to assume that enough 'windfall' sites can be found to

compensate for inevitable losses of housing land.

34. SUMMARY. On this basis, London's future housing capacity might be:

TABLE III
Additional housing capacity of London 1961-81

	<i>houses</i>
Remaining vacant land	30,000
Private redevelopment of low density areas	90,000
Subdivision of dwellings	45,000
General redevelopment	25,000
Total	190,000

In all the circumstances, it would not be wise to assume for planning purposes that more than about 200,000 *extra* dwellings can be provided in London itself over the period of the Study.

Overspill from the London conurbation

35. This is the balance sheet for London over the Study period. Housing need, 550,000 dwellings (150,000 to relieve existing shortages, 400,000 for population growth, including growth in the number of households). Housing capacity, about 200,000. This means that 350,000 London families will need to find their homes outside the conurbation; translated into terms of people, it means that London will have an overspill of more than 1 million people by 1981.

36. What this means is that the 200,000 extra houses which can be provided would do little more than deal with present shortage. The equivalent of nearly the whole of the population growth of London will need to go out of the capital, either as commuters, returning to work there daily, or further afield. This rate of overspill—1 million in 20 years—is in fact a little smaller than the rate experienced over the last ten.

37. This will leave London in 1981 with a population level little different from the present one—just over 8 million—for, while 1 million people are moving out, natural increase will be adding another million. In fact, the figure is likely to fall a little over the next few years, and rise again, with the growing rate of natural increase, in the 'seventies.

38. The consequence for the rest of the South East is that, since London cannot accommodate its own natural increase, the whole of the population growth of 3½ million will have to be found homes elsewhere—a population increase of well over a third for the area outside London.

39. How an increase of this order can best be distributed forms the main subject of this Study. But, first, it is necessary to look at two special London problems—the growth of employment, and commuting.

¹See, for example, paragraph 40 of the London White Paper which estimated that about 150,000 houses would be required for replacement purposes. This included 40,000-50,000 for slum clearance where there should be little or no net loss in terms of land; but it covered only a few-year period.

London employment and the office problem

THE total employment growth in London in recent years has been large, and the rate of growth has been accelerating. Over the seven years 1955-62 the average annual increase in jobs in the London conurbation was 42,000; but for the last three years for which figures are available (1959-62) the average increase amounted to over 63,000. Over the seven-year period, nearly 300,000 extra jobs were created in London, an increase of 6.6 per cent. This was close to the rate of employment growth in England and Wales (6.8 per cent), but significantly below that for the South East as a whole (10.1 per cent).

Manufacturing industry

2. The pattern of employment growth in London has been very uneven, both geographically, and in the form of the additional employment provided. Growth in manufacturing industry, as might be expected in an area where Government policy has been to check and divert as much industrial growth as possible, has been slow. During the period 1955-58 there was actually a slight fall in the level of employment in manu-

facturing industry, and the percentage increase between 1959 and 1962 (2.1 per cent) was less than half of that experienced in England and Wales generally, and only a third of the rate for the South East as a whole.

3. These figures point to a relative decline in the importance of manufacturing industry in the economy of London. With growing congestion on the roads and physical shortage of space for

expansion, the future of London industry lies more and more in the outer suburbs and in the ring around London—particularly in the new towns and other towns housing the modern industries and the new factories of the outer metropolitan region. It is in these places that much of the industrial growth restrained in

London by controls, by labour shortage and by physical circumstances is taking place. During the period 1959–62, the number of people employed in manufacturing industry in the outer metropolitan region rose by 85,000, an increase of 14·6 per cent, nearly three times the national average.

Service employment

4. In London itself, the big increases have been in service employment, including office jobs. Over four-fifths of all the additional jobs in recent years have been in service employment. Furthermore, more than half the total employment growth in the conurbation has been concentrated in the small central area. Two-thirds of this was in offices. In the congested heart of London—little more than the City and the West End—15,000 more office jobs have been created every year. Work in offices probably now makes up about 60 per cent of the total in the central

area; in contrast, shops employ only about 4 per cent of all workers there.

5. The problem is that more jobs mean more workers; and more workers mean more homes; and the possibilities of providing more homes in London itself—and particularly in inner London—are very limited. The growth of office employment is therefore particularly significant, both because of its size, and because of its concentration in the central area, where homes cannot be found, and where the transport services are becoming increasingly overloaded at peak hours.

Office growth

6. Nearly ten million square feet of office floor space in central London was lost through war damage, and some of what remained was in old-fashioned buildings. For some years after the war the construction industries were subject to the building licensing system, and by the time these controls were relaxed in the early 'fifties there was a pent up demand for offices in central London. The war had cleared many sites and, at first, planning permissions for office building were readily forthcoming. Even when the consequences of extensive office building in the small central area were realised, the planners' freedom of action was severely limited by compensation

liabilities. Broadly speaking, the local planning authority could not, without risk of footing a heavy bill, refuse to allow an office block to be built on sites where offices had stood before. Furthermore, because of an unforeseen effect of the law, they had little choice but to allow developers to put more floor space on a site than stood there before.¹ This applied not only to war damaged sites. It soon became clear that it was worthwhile for a developer to pull down standing offices—many of which needed to be replaced anyway—in order to gain this extra floor space for letting. This legislative loophole has now been stopped up.

¹The effects of the Third Schedule to the Town and Country Planning Act 1947 are explained in more detail in Appendix 2 of the London White Paper.

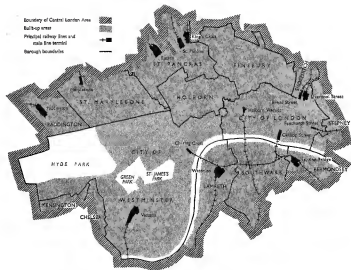


Fig. 16. London: central area

The Greater London Conurbation Centre as defined in the 1961 Census. The annual counts of peak period traffic taken by the London Transport Board (Chapter 8, paragraph 10) cover passenger movement into an area which differs marginally from this

7. The build up of offices in London has been supported by two long term trends. The first is the gradual shift of emphasis from making things to designing and marketing them. As growing mechanisation makes it possible for industry to produce more goods, and more valuable goods, with fewer workers, so more white collar workers are needed in the drawing shop and in the manager's office. A bigger selling organisation is required; advertising, for example, is one of the growth industries. The second is the tendency for industry to organise itself in larger units; when a certain point is reached, the chances are that the head office will be found in London, rather than in the provincial towns which saw the origin of the component parts of the organisation.

8. Office building in London has been meeting an economic demand; and, while it has been creating serious planning problems, it is well to recognise the sources of the demand. First, for many of those engaged in some kinds of commercial activity, there is value in a central London location. London is outstandingly important in the fields of banking, insurance and international commerce and trade. For some firms, it is of value to be near Parliament and the seat of Government, close to the Law Courts, the Port of London or the Stock Exchange—and to each other. For others, showrooms and offices in London give an opening into the mass

market of the South East or into the international market. A City or West End address carries prestige for which a big concern is prepared to pay, and has to pay, heavily. The new offices in London are one reflection of economic development and growth.

9. What is troublesome is not just the amount of new office building but its concentration in a very restricted area. The war damage losses in the central area were quickly made up and by mid-1962 there was nearly 115 million square feet of office floor space in central London¹, compared with the pre-war figure of 87 million square feet. This did not include another 18 million square feet which was at that time under construction, or had received planning permission (representing a net addition of perhaps 14 million square feet, allowing for demolitions). Nor is that the end. There are still office sites ripe for redevelopment where even the modified Third Schedule rights will allow some increase in floor space; and there are possibilities of some additional office building on sites in commercial areas which cannot reasonably be put to other uses. In 1963 the London County Council estimated that they were committed to a net increase of 25 million square feet of office floor space in the central area (including permissions already granted). At a generous estimate of 150 square feet of floor space per office worker this means an extra 170,000 office jobs still to come.

Future prospects

10. Whatever the economic necessity and value of this further growth, there can be no doubt of the magnitude of the housing and transport problems it will present. How quickly will this growth come? What can be done to influence the rate of growth in the central area?

11. The current rate of net increase has fallen from that of the peak years 1955-59, in each of which there was a net increase of more than 4 million square feet; this is because most of the war damaged sites have now been built on. It takes longer to clear a site of existing buildings

¹No other big city approaches these figures. For example, in 1962 Birmingham had about 7 million square feet of offices in its central area; Liverpool, 6 million; and Manchester, 7 million.

and redevelop and, of course, not all floor space is net gain. But the rents being asked, and obtained, in central London offer no evidence of slackening demand, and there is a possibility that most of the extra 25 million square feet may be built within a few years. This would add to the difficulty of finding homes and housing land for the tens of thousands of extra commuters, to the cost of providing transport to bring them in daily, and to the congestion in the heart of London itself. 12. It is becoming more and more apparent that the advantages of an office in central London are bought at high cost to the employer in terms of rent, rates, wages and fierce competition for staff, even though these do not represent the full

social costs. There are signs of a growing awareness of this; the Location of Offices Bureau has received many enquiries from firms seeking information and advice about decentralisation. 13. For some firms a complete transfer of activities may be possible; but there must be many more for whom the hiving off of routine work could represent a saving of cost without loss of efficiency, leaving in the central area only those parts of their organisation for which the advantages of a London base outweigh the extra cost. Transfers of this kind are of real value, even if the vacated space is reoccupied by another firm, for the effect is to reduce the total demand for floor space in the centre. If the policy of

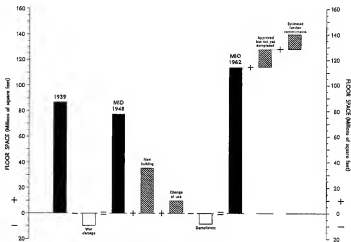


Fig. 17. Office growth in central London since 1939

Based on figures supplied by the London County Council (see Appendix 2, Table 24)

decentralisation is successful, it will slow down and, coupled with the use of planning powers, perhaps eventually stop the provision of additional offices in the central area.

14. Until recently decentralisation was not easy, even for firms who could see the disadvantages and expense of remaining at the centre. One of the factors which nourished overgrowth in the central area was the absence of alternatives for firms looking for new, modern offices. Massive development was going on in the City and the West End and very little elsewhere. Now many more planning permissions are being sought and granted in the suburbs and further out, and many planning authorities are making provision for offices in town centre schemes.

15. It will greatly help to speed up the process of decentralisation if the development of new office centres is encouraged. These will need to be at varying distances from central London to meet the varying requirements of different firms. Proposals, which would need to be dis-

cussed with the local planning authorities, will be found in Part Two of this Study (Chapter 13).

16. The measures recently introduced by the Government are of a kind that need time to make their full effect felt. The restriction imposed by the amendment of the planning law, the campaign of persuasion by the Location of Offices Bureau, the establishment of alternative first-class office centres on the periphery and beyond, and the effect of congestion and costs on the decisions of employers to remain in central London will all have a bearing on developments in the next few years. It may be that persuasion and the provision of alternative centres will not, in themselves, be enough to offset what central London has to offer to employers. Two courses would then be open; either to slow down office growth by further restrictions, or to organise transport and housing on a scale compatible with the growth in employment. Neither of these courses, unfortunately, presents a straightforward solution to this intractable problem.

Travel to work in London

IN theory, commuting implies a deliberate choice by individuals of a daily journey to work in a city in order to have a home outside it. But, for most people who work in central London today, commuting is no longer a matter of choice; and, at its worst, it can be one of the most wearing and unpleasant features of urban life.

2. The history of the last half century shows a pattern of longer and longer commuting journeys, made practicable by transport improvements (notably railway electrification), which have cut travelling time. Higher wages, shorter hours and the five-day week have helped this trend; so have the wish for better living conditions and the desire to live in the country.

3. It can be argued that commuting is a bad thing in itself; that it is wasteful of time and manpower; that it creates demands for transport which can only be fully used at the morning and evening peaks; that it produces dormitory communities that form unsatisfactory societies; and that it is steadily eating up the countryside around London. However much there may be in these social arguments, the fact remains that the

continued growth of employment in central London means not less travel to work but more.

4. The crucial figures bear repeating. An average annual rate of increase in jobs in the conurbation of 42,000 between 1955 and 1962, leaping to an average of 63,000 in the last three years. In the central area, a growth of 15,000 office jobs a year; probably about 20,000 when other forms of employment are allowed for.

5. At the same time, the resident population of the conurbation has been falling. Many of those who have gone have taken up fresh work in new towns and other places, and some will have retired; but it is thought that, in recent years, about 7,000 families a year have been moving into the ring around London where large scale private enterprise building has made it possible

for the city worker to have a country or suburban home while keeping his job in London. This means that more travel to work is generated than the increase in employment by itself would require. This tendency will continue; although it is hoped that, by 1981, the population of the conurbation will be back at its present level, for some years at least the steady outward move-

ment of white collar workers, with their families, will continue. In the 'fifties, some part of this outward movement was absorbed in the outer parts of the conurbation itself, but with the virtual disappearance of virgin building land, there will be less scope for this in the future. Even more of the burden will fall on the outer metropolitan region and the longer range transport services.

The present scale of commuting

6. Anybody who works in London needs no figures to convince him that there has been an increase in commuting travel over the last decade. The evidence is there in the road congestion, in the crush on the Underground, and in the overloading of some of the suburban rail services at peak hours.

7. As well as an overall increase in commuting, there have been significant changes in the proportions carried by different types of transport to the central area; and some changes in the future pattern are inevitable. In the last decade the load carried on the buses actually fell by 25 per cent, while there was a sharp increase in the share carried by British Railways and the Underground. These changes reflect a growing disinclination to use the buses as road congestion slowed up journey times; and, more important, a transfer to the forms of transport more suited to longer journeys. The tendency for people to find their homes further out was already becoming evident.

8. The public service figures were also affected by a big upswing in the use of private vehicles. The volume of commuting by car and scooter doubled over the decade; without this, overcrowding on public transport would certainly have made itself felt even more strongly. But, even with this increase, private transport still carries less than 10 per cent of all commuters. The limiting factors are the capacity of the roads

to take more traffic in the rush hours, and the number of vehicles that can be parked in the centre of London. Parking policy is set against the commuter; it is becoming steadily more difficult and more expensive to leave a car in the central area all day. The introduction of parking meters in the City in 1961 held traffic to the previous year's level; during the two years before, there had been a rise of 11 per cent.

9. The sharp increase in commuting by private vehicle over the last decade is a phenomenon that is not likely to be repeated; public transport will have to take the lion's share of the big increases to come. The Buchanan Report emphasises the need to retain and improve public transport for the journey to work, particularly in large cities. It is clear that a solution to the overall transport problems in London cannot be found through a further substantial increase in commuting by private vehicles.

10. London Transport's annual figures of people entering and leaving the central area by all forms of transport also reflect the growing rate of employment increase in London. The average annual rate of increase over the decade was 13,000; but for the first five years it was only 7,000, rising to 20,000 in the last five. For the rail services, the figure was even higher—22,000 a year in the last five years—because they have taken over some of the traffic lost by the buses.

11. Thus there is a close relationship between

the volume of commuting traffic and the additional employment created in the central area. Indeed, it seems likely that the growth in traffic on the longer range public services (rail and

Underground) is a little higher than the rate of employment growth. This discrepancy is probably due to the movement of white collar workers to homes outside the conurbation.

The future of commuting

12. It is employment growth in the central area that sets the critical transport problems. Given that most of the net increase in the supply of housing for Londoners has to be found outside the boundaries of the conurbation, most of the extra central area workers will have no choice but to come in to one of the main line termini on the suburban rail system. At this kind of range, the buses cannot help, and the scope for more commuting by private vehicle is limited. The Underground will have an important part to play, but one of its main functions, together with the buses, will be to provide an efficient distribution service to the centre. The main weight of the extra commuting to the central area must fall on the suburban railways. Employment growth in the outer parts of the conurbation will produce a more complex transport pattern. Here too some extra load on the railways is inevitable; but there will be more scope for short range journeys by bus and car; and rail passengers travelling to work in the outer suburbs will leave vacant places on the vital last few miles where overcrowding is usually at its worst.

13. For the future, there is likely to be a steadily increasing commuter traffic for the railways. They will have to carry workers for the additional jobs created in the central area; and those of the workers at present living and working in London

who move out to the outer metropolitan region while keeping jobs in or near the central area (commuter overspill, in planners' jargon). The current rate of increase in the central area is about 20,000 new jobs a year; and there are enough new offices in the pipeline to keep this rate going (allowing for increases in other employment) for several years ahead. The rate of increase will depend on the success of the measures being taken to get a better spread of office growth, but it will take time before their full effect is felt. There will also be new jobs outside the central area, but near enough to the main line termini to make rail the most attractive method of travelling to work.

14. Any prediction of the future commuting rate is hazardous. But, on these figures, and bearing in mind the current rate of increase, it seems unlikely that the increasing load could come to less than an annual average of 20,000 in the period up to 1971. This means that we must expect 200,000 more commuters, over and above the number travelling to central London in 1961; though not all of them will travel at the most congested hours. There may well be further heavy demands after 1971. But the pattern of transport needs after that date will depend very much on the success enjoyed by the policy of office decentralisation.

The problems of more capacity

15. It is therefore a question of getting more trains, or trains with more capacity, into the centre at the right time to provide for at least another 200,000 people to travel into central London in 1971 over and above the number travelling in 1961; with a probable need for more in later years. There is some spare capacity on some services, and more will be provided by the rail improvement schemes already planned. But both the amount and the distribution of the extra capacity raise problems. One of the most important is the matching of housing land with rail capacity; it is no use having room in the trains if the houses cannot be built on the routes they serve.

16. Extra capacity can be provided in various ways. In some places improvements to the

present system and reshaping of services, without extensive work on the tracks, can allow more passengers to be carried. For instance, new higher capacity coaches can replace the existing ones; trains and platforms can be lengthened; and new signalling systems can be introduced which allow more trains to use the existing track. When everything possible has been done in this way, the carrying capacity of the railways is controlled by the physical limitations of the tracks available. At this point, more expensive improvements come into the picture. There are the limitations imposed by particular bottlenecks: by the capacity of a terminus or of a big junction. All these methods of increasing capacity are expensive and may not be remunerative on particular services.

Additional capacity and its distribution

17. The possibilities of providing additional capacity for commuters have been explored with British Railways and London Transport. As was noted in the London White Paper, the pattern of spare capacity on the railways at the moment is uneven. There is comparatively little spare capacity on the services for longer distance commuters south of the river; to the north, the peak hour services can absorb a considerable increase.

18. Moreover, there is scope for further increases of capacity north of the river. Necessary measures to renew rolling stock and equipment are already providing an opportunity to re-schedule services and increase train loadings here. South of the river, where re-equipment since the war has already added to the capacity of the services,

further physical works to increase capacity with present service patterns would have to be of a major kind. They would involve large scale and very costly investment which could almost certainly not be justified by the revenue potential of the extra peak hour passengers that could be carried.

19. If account were taken only of this pattern of spare capacity for more commuters, there would be serious difficulty in finding housing land to match. Very heavy demands would be made on the counties north of the Thames, which have experienced heavy population increases in the last ten years and where the land situation is already difficult. On the other hand, there would be little point in allocating more land in some sectors south of the river where, with

the present pattern of services, there seemed to be little prospect of making more spare capacity available.

20. British Railways have, however, been re-examining the present pattern of services, particularly south of the river, to see whether a complete reshaping of the pattern of train movement would result in more efficient utilisation of existing track, and thus provide additional capacity. A great deal more work remains to be done before a detailed appreciation of potential capacity can be established. It already seems clear, however, that, given the necessary capital investment, the services south of the river might be able to cater physically for an increase of some 200,000 passengers in the peak hour of 5 p.m. to 6 p.m. alone. For the London area as a whole, it seems possible that the combination of modernisation, where it is reasonably practicable, and general reshaping of the pattern of train movement, would allow the British Railways network to cater for another 450,000 peak hour commuters, enough to meet the demands for many years to come.

21. An increase in capacity of this order, particularly on the complicated network of the Southern

Region, would mean a very considerable change in the pattern of services. While the details have not yet been worked out, it is clear that the provision of more fast trains for longer distance commuters would mean substantial alterations in the services provided for other travellers, especially those living nearer in. It might be necessary to eliminate some stopping services, perhaps even to close certain inner suburban stations on the critical approaches to the London termini, and to reduce the choice of terminus available to passengers on particular routes.

22. If more commuters are brought in by rail, London Transport will face the problem of distributing them from the railway termini to their places of work. A reshaping of railway services on the lines now being studied by British Railways would entail greater interchange between trains and perhaps a greater reliance on the Underground network for distribution in the inner area. London Transport are studying what development would be needed on their services. In their view, additions to the Underground network would be required, in addition to the Victoria Line which is already under construction.

Cost of improvements

23. The cost of extra rolling stock, platform lengthening, signalling and other necessary measures to provide expansions of the order mentioned above would be heavy. British Railways estimate the order of cost to them at some £100 million, of which some £30 million would be needed on the Southern Region. The capital cost to London Transport might be even heavier.

24. There are difficult questions of timing. Some spare rail capacity is already available on lines serving the counties to the north of London, and British Railways have made good progress with the planning of schemes of improvement of services in this area; but it may not be easy to

allocate enough housing land for additional commuters in these counties. The position on housing land would be made easier if additional capacity could be provided in other sectors; but, even allowing for the relief provided by the Victoria Line, congestion in the central area would be worsened if large numbers of extra commuters were brought in, particularly from the south, before London Transport were able to carry them from the main line stations to their work. This may prove to be a limiting factor.

25. The effect of all this on the finances of British Railways and of London Transport needs to be examined before schemes of this kind could be

entered into. For example, the cost of the Victoria Line will have to be met by users of the London Transport system as a whole. Whether further extensions of the Underground system

could be paid for in this way is a question that will require separate examination. A similar point arises in connection with the suburban services of British Railways.

Land allocations

26. The next important step is to see to it that housing land is allocated in those areas where the railways are able to provide capacity, and, in particular, in those sectors where spare capacity is already available or will be soon. This is a matter for detailed discussions with the local

planning authorities; but the possible pattern of rail development in the future, as it now appears, has been taken into consideration in preparing the estimates of population growth for the counties likely to be affected, in Chapter 15.

Summary of the problem

THESSE, then, are the main problems that have to be faced in the South East over the next twenty years or so:

A STRONG POPULATION INCREASE: 3½ million extra people, an increase of 20 per cent, over two-thirds of that increase coming from excess of births over deaths in the South East.

A STRONG EMPLOYMENT GROWTH: much of this in service employment, especially, in the early years, in offices in London. Much of the industrial growth not in London itself, but in the ring surrounding the capital.

A BIG OVERSPILL PROBLEM—at least 1 million people—from London.

AN ACUTE LAND PROBLEM AROUND LONDON, where converging population pressures meet the green belt.

2. The problem is not merely one of the scale of growth that has to be expected; equally important is the distribution of the growth. If present trends are left unaltered, the greater part of the population and employment increase will be concentrated in what is already the most densely populated, over-developed and congested part of the South East—in London itself and in the outer metropolitan region.

3. Whatever may be done in the South East as a whole, the land problem of the ring around London will be the most difficult to solve. The whole of the metropolitan region has become so urbanised that the establishment of the green belt was a vital planning necessity—and so is its retention now. But it was established on the assumption of a broadly static population and

employment situation. The difficulty is to reconcile the concept of a completely restrictive green belt with a vigorously growing population and a vigorously growing economy inside it and around it.

4. There are three main approaches to these problems; they are complementary.

5. The *first* is to ensure that everything possible is done to encourage growth outside the South East so that there is a more even spread of development over the country as a whole. The measures needed for this are receiving separate study, and the assumption is made that, where necessary, they will be taken and will be successful in their effect.

6. The *second* is to ensure that no employment growth, whether industrial or commercial, takes place in the South East which could be diverted to other parts of the country. This is a matter of continuing and, where possible, strengthening existing policies.

7. The *third* is to get the best possible distribution in the South East of the population growth that seems inevitable. This raises big questions of land use over the region as a whole; and it is with these questions that Part Two of the Study is mainly concerned.

Part Two

PROPOSALS

The broad strategy

OVER the next twenty years, land has got to be found for $3\frac{1}{2}$ million people, and for 1 million of these, at least, it will mean moving out of London. Population change on this scale will make a heavy impact on the South East; and the need is to plan it so that the result is a better distribution of people and jobs.

No plan at all?

2. The alternative to a plan deserves consideration, for there are plausible arguments for doing nothing. If there were no positive efforts to guide the movement of population and to control the growth of employment, London would become an even stronger and an even larger magnet than it is today. Even more offices would be built in the central area, calling for more housing and more transport for the workers in them. A phenomenal rate of growth could be expected in the ring immediately surrounding London, which is already experiencing the fastest rate of

population and employment growth in the whole country. This outer ring will in any event have to find land to house its own strong natural increase, for migrants drawn in by its own young and expanding industries, and for London workers who cannot find homes in the capital.

3. It is sometimes argued that the situation would be self-correcting; that in such circumstances the cost of housing and travel would rise to such an extent that this would have to be reflected in wage increases; and that these wage increases in turn would damp down the demand for labour,

which would become progressively harder to get. 4. Such a prospect would be intolerable, inefficient and expensive. In so far as homes for the extra population drawn to the London orbit had to be found on the periphery, there would need to be very large cuts in the green belt. Whatever may be the arguments against retaining the green belt in its present form, a continuous urban sprawl of this character would pose enormous

problems of communications. It would not simply be a question of adding substantially to the cost of improving the suburban rail services; the road problems arising out of this growth, when multiplied by the increase in traffic that has to be faced, would be enormous. One lesson of the Buchanan Report is that, as the continuous built-up area becomes larger, so the traffic problem becomes more difficult and expensive to solve.

The overspill approach

5. The practical arguments against allowing the growth of the South East to spread where it will, or even encouraging more concentration in London, are very strong; but simply to reject these philosophies does not produce a new one. Before the war, the growth manifested itself as a simple outward sprawl from London. The revulsion against this produced the green belt and the first new towns. Great benefits have flowed from this double conception of containment coupled with planned overspill. Hundreds of square miles of countryside around London have been saved; and scores of thousands of London families have been given new homes in a better environment. If the problem were static, or one of only moderate growth, this would have been enough. London could remain much as it is, and the new towns would provide the elbow room needed to get rid of overcrowding in the capital. But London is not static.

6. The present conception of new towns and town expansion schemes as receptacles for London overspill is not adequate to deal with this situation. They receive the overflow; but do nothing to turn off the tap. If we go on as we are—perhaps stepping up the programme a little to receive more overspill—little will be done to change the nature of the problem. London will continue to be the most attractive centre in the whole of the South East, and in the whole of the country.

7. More employment growth in London is likely. The consequences of that growth must be planned for in and around London. But a big change in the economic balance within the South East is needed to moderate the dominance of London and to get a more even distribution of growth. Employment is the key, but many firms are unwilling to go to places which they regard as unsuitable for the conduct of their business.

Growth away from London

8. What is needed is the creation of conditions in which expansion can take place well clear of London. One important need is to draw growth—and particularly commercial growth—away

from London. Towns that can do this will, among other things, help to absorb London's overspill. But their function would be wider than that of the existing new and expanded towns.

The aim should be to develop centres of growth alternative to London; only so can we ease the intensity of the pressure on London and the outer metropolitan region. Towns which are themselves centres of commerce and industry could make a large contribution to national prosperity and rising standards of living. They would generate new growth, some of which could be hived off to strengthen the economies of other regions. The biggest of these growth centres would rank as cities of the future.

9. From the point of view of employers, these

centres should be places whose advantages are comparable with those of London, and where business is likely to flourish. For people who must leave London and for migrants coming into the South East, these places should offer the prospect of a good job, pleasant surroundings and a better life than could be expected in the crowded capital.

10. To be effective these centres would have to be large and strong. Obviously it would take time before their influence is felt. But they offer the best chance of checking London's continual growth.

Normal growth in the South East

11. All this implies a policy of planned schemes of expansion to provide jobs and homes. But a large part of the population growth in the South East will not require the deliberate development of growth centres. For the greater part of the population growth, the ordinary planning machinery for allocating land to meet foreseeable needs can function satisfactorily, as long as the planning authorities are given warning in time of the size of the population increases to be dealt with in their land budget. Allocations of housing land can then be made by them, for the most part in the form of the normal growth of towns and villages, and, as will be seen, this is the manner in which the greater part of the growth expected in the South East is likely to be dealt with.

12. The largest single element to be provided for in this way is the natural increase of the local population. Every county in the South East will have its share of this. In Chapter 15, estimates of natural increase, county by county, are given which will help the responsible authorities to make the necessary allocations. The planning authority itself will know best how to distribute this increase within its area, having regard to the local pattern of population movement and physical limitations. These are not the concern of this Study for they are local, rather than

regional problems, although they will present their own difficulties in some places.

13. Local allocations in development plans will have to be stepped up to meet two particular needs beyond those of local natural growth. The first is migration for retirement. This will affect only a few counties, and there is no reason to expect the pattern of the past to change. Much of this type of migration has been concentrated on seaside towns, and its effect on the population structure of these places has been to alter the balance of births and deaths to a marked degree. Some seaside towns, in fact, can expect a fall in population by natural change, rather than an increase.

14. The other big requirement will fall primarily on the planning authorities in the outer metropolitan region. This is to provide housing land for the workers who cannot find homes in the conurbation itself. Some of these will be people moving privately out of London; others will be migrants drawn directly into the outer metropolitan region by the employment opportunities offered by London. Allocations of land for this purpose will need to be aligned with railway capacity (see Chapter 8), and the extent of the provision that needs to be made is discussed later (Chapter 15).

Planned expansion programme

15. But the development plan allocations of the local planning authorities will not normally deal with two important components in the population increase: these are a large part of the overspill from London and migrants for work.

16. Under existing policies, planned expansions—i.e. new towns and town expansion schemes—would expect most of their intake to be overspill from London. But leaving migrants out of the reckoning merely assumes a continuation of the currents which draw people to London and draw them away again as overspill. There are bound to be migrants; but if some of them can be brought into expansion schemes, they can be diverted from London altogether.

17. It was estimated in Chapter 6 that there would be an overspill of more than 1 million people by 1981. It is difficult to say what proportion of these will make their own arrangements to move out, many of them as commuters. In the short and medium term, it is not likely that there will be any great change from the current rate of movement of this kind, which is thought to be about 7,000 households, or roughly 20,000 persons a year. There is still growth to come in London which will hold workers within commuting range. In the long run, the diversion of employment to new centres of expansion should reduce the flow; but their effect is unlikely to be strongly felt until the 'seventies. For the moment, there is no solid reason for assuming any radical change in the rate, and, on this basis, out of the million overspill about 400,000 would move under their own arrangements, and will need to be provided for in the ordinary land allocations of the local planning authorities.

18. In broad terms, therefore, and allowing for the fact that the calculation of 1 million overspill is probably an under-estimate, this would leave at least 600,000 overspill from London to be provided for in planned expansion schemes during the period 1961-81.

19. To these must be added migrants for work—well over three-quarters of a million. This would give nearly 1½ million as the total population to be accommodated in planned expansion schemes. But of these, over a quarter of a million will be able to go into the existing new towns or into town expansions which are already under way or firmly planned (this figure does not allow for any further expansion of new towns beyond their present designated areas). New schemes, and extensions of existing ones, would therefore be needed to provide for nearly 1¼ million people.

20. It is not suggested that this should be taken as a firm target, and that schemes should be put in hand forthwith to absorb that number. Many of the figures going into the calculations are tentative; trends may well be modified; and important new light may be thrown on the pattern of population growth before a lot of money is spent on any scheme. There have been surprises in the past about population changes, and there may be others in the future.

21. Rather is it suggested that a broad figure of 1 million to 1¼ million provides a reasonable basis for considering the scale of operations that needs to be attempted, and can act as a guide in the preliminary sifting of places that offer prospects for expansion. The idea would be, after consultation with the local authorities concerned, to produce a list of schemes approximating to this total, and to put schemes in hand, and vary the pace of building, as needs are confirmed. Individual schemes would continue after 1981.

22. Nor is it desirable, at this stage, to try to label too firmly the people who will come to live in these places, for the movements of population which take place are very complex. The main point is that there should be a coherent programme of planned growth, well away from London, broadly on this scale.

Planned expansion schemes

THE planned schemes of expansion would have two main objectives: to get population and employment away from London, and to supplement the normal land allocations of the local planning authorities by providing for about one-third of all the population growth expected in the South East by 1981 (roughly 1½ million people).

2. In selecting places there is no need to stick rigidly to the artificial boundary of the Study area. As well as choice of places, there should be a choice of methods and machinery—new towns, expansions of existing towns: starting new schemes and building up on ones already under way. There are the alternatives of a few big developments or a lot of small ones.

3. In practice, the choice is sharply narrowed. It is not a question of dotting new towns here and there on a blank map; much of the South East is intensively developed and, more important, it will have to accommodate a great deal of natural growth as well as these expansion schemes. It is essential to try to even out the distribution of the growth, as far as the facts will allow.

General strategy

4. Above all, the schemes must be successful. This sounds obvious, but it needs to be said. If the new centres are to exert a genuine pull on

London and are going to provide homes for over 1 million people by 1981, they cannot be chosen by negative criteria. This means that places

should be chosen for expansion which will have a firm prospect of rapid, sound and prosperous growth, and, above all, the ability to attract commerce and offices from London. It is no use choosing places simply because they need rejuvenating; or because there is dereliction to

be cleared; or because the land is poor. That is not to say, on the other hand, that places which need rehabilitation should not be chosen as growth centres, if they have the necessary advantages, or that bad farmland should not be built on in preference to good, where there is a choice.

Size

5. The first and dominating factor then is a reasonable chance of success. The second is size, and the two things are closely linked.

6. Practical limitations are very important here. The number of places where there is room for a big new town is small; the number of places where such a town could be expected to prosper is even smaller. There may also be some limitations on the speed at which any particular scheme can go. The experience of the current new towns suggests that it is difficult to sustain a building rate of more than about 1,500 houses a year. There are some indications that beyond this they might run into trouble. This is not just a question of building capacity, although availability of labour is important; indeed, an ambitious new scheme, providing a large site for operations, might give industrialised building techniques the opportunity to build houses faster than ever before in this country. The difficulties have lain more in planning a properly balanced programme of investment for growth on such a rapid scale. In theory, it should be easy; but in practice, things may get out of hand. Housing must keep in balance with jobs, and the rate of industrial and commercial development may restrain the programme of housebuilding. Moreover, there are social difficulties. A rapid build-up produces an unbalanced structure, with too many families of the same age and background, leading to a series of bulges that may take several generations to even out.

7. There is clearly no absolute limitation here. Improved management techniques may over-

come many of these difficulties and, where a big expansion scheme is based on a large existing town, this will provide the ballast of an existing, stable community. But there is clearly some limit to the pace of growth in any one scheme, and this, combined with the fact that it will take several years to get a big expansion planned and under way, means that homes for 1½ million people cannot be provided by 1981 in two or three very big schemes alone. This is a point of general application; it is not possible to define a single 'optimum' form of solution (whether chosen by financial, economic or social criteria) and concentrate on that. Given the magnitude of the task, and the physical facts as they are, a variety of methods need to be used.

8. Subject to this general reservation, big schemes are better than small ones. Large schemes have all the advantages when it comes to providing employment. Small expansions do not readily attract big firms; and the small ones which go to them are at best unlikely to grow fast in aggregate. Only a big town can provide enough school-leavers to meet the recruitment needs of office firms. The bigger the town the more chance there is of finding local industrial or commercial firms that could grow, given the necessary freedom and the stimulus of an expansion scheme.

9. There are other advantages. Generally speaking, the cost per head of providing basic services should fall with increasing size. And only bigger towns—say 100,000 plus—can support a first-class shopping centre, a full range of urban services, a complete educational system and a

variety of entertainments; these things are necessary, not only in their own right, but also because they influence the decisions of employers.

10. There is also the question of administrative and technical effort. A lot of small schemes are an extravagant way of using the very limited numbers of skilled staff who are qualified to plan operations of this kind. With the exception of one or two of the larger schemes the current town expansion programme has produced results, in terms of quantity, that do not adequately reward the effort that has been put in by central Government and by local authorities at the sending and receiving ends. The availability of qualified staff may well prove to be a limiting factor on the execution of the whole Study and it is essential that their skill should be concentrated where it will produce most results.

11. On the other hand, there must be some upper limit beyond which it is not realistic to plan. Limits may be set by the physical capacity of the chosen site and, over any given period of time, by the rate of growth that can be achieved. Nobody can know what is to be the final size of any new town started over the next few years; but the initial target should be large, so that something worthwhile is produced. At the most promising sites allowance should be made in the initial plans for further long term growth up to the scale of a major city.

12. Rather different considerations arise with

expansion of a large existing town. Physical limitations may be much more important, and cost per head of additional population may change sharply as the scheme passes points at which major additions to the public services become necessary. The stage at which a big reconstruction of the town centre becomes necessary will also be critical. In this context the traffic needs are crucial.

13. To sum up, the advantages lie with large schemes; but it is impossible to put the whole expansion programme into, say, two or three new towns of half a million each. They would not produce nearly enough houses in time. Equally, a pepper-potting of small schemes is undesirable. It would be unworkable administratively; and would not produce the strong concentrations needed to pull growth from London.

14. So what is wanted (which is conditioned by what can be done) is a balanced programme with a few really big schemes and a number of large to medium sized expansions also. Some should be new towns and some expanded towns, because the two methods are to some extent complementary. New towns are a straightforward and well-tried method, particularly suited to settlement of population and industry within a limited period of years. But for some years they do not provide the pool of labour for office work; and this should be looked for initially in well-established large towns.

Choice of location

15. The areas chosen for growth should lie in places where both industry and commerce can be expected to thrive, and communications, are a vital factor. Any employer will seek first-class links with London and other large markets and centres of industry. There must be easy access to the heads of international communications—the

ports and the airports. Primary importance attaches to road communications, for experience in the new towns shows that these are what employers look for first. But rail may have a bigger part to play if the new forms of goods services now being developed prove to be attractive.

Communications in the South East

16. The whole of the South East benefits from the key position of London in the national communications network (see Fig. 18). The roads and the main railway lines radiate from the capital on their way to the Channel ports; to Wales and the

West Country; to the Midlands and Lancashire; to Yorkshire, the North East and Scotland. In doing so, they pass through practically every part of the South East; and only East Anglia is less well served.

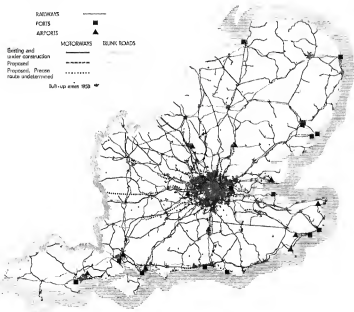


Fig. 18. Communications

The railways shown are those in use in August 1963; the roads include proposals approved by October 1963

17. RAIL. For rail, London is the centre of the national system (see Figs. 19 and 20). Whatever difficulties there may be in finding enough places for the daily tide of commuters into the capital, there will be no shortage of medium and long range capacity to serve London and the towns in the South East lying on or near the main lines. Some services and the rail network itself may be cut back; but the proposals in the Beeching

Report¹ are unlikely to have more than a minimal effect on the expansion programme suggested.

18. In the present climate, it is not realistic to expect major new railway developments in the South East. An exception to this is, however, the proposed Channel Tunnel, which offers prospects of improved communications with the Continent, not only from the South East, but from the country as a whole.

¹*The Reshaping of British Railways* (H.M.S.O., £1)

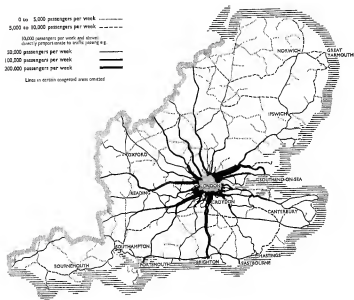


Fig. 19. British Railways: density of passenger traffic 1961

Derived from *The Reshaping of British Railways* by permission of the British Railways Board

19. ROADS. As with the railway system, the road network radiating from London leads strength to the whole of the South East. There are over 1,500 miles of trunk road in the Study area. Since 1955, nearly 80 miles have been completely reconstructed or been improved, and 50 schemes, each costing over £100,000, have been carried through. 70 more schemes are planned and should be authorised over the next five years—some have already started—and these will improve 116 more miles of trunk road. These

are concentrated on the most heavily used radial roads from London, such as the A1 (Great North Road), A3 (Portsmouth), A12 (Ipswich) and A40 (Oxford and South Wales).

20. Nearly 100 miles of motorway have been provided in the South East, comprising part of the London-Birmingham motorway, the Medway motor road, by-passes at Maidstone and Stevenage, and sections of the London-South Wales motorway (M4) at Slough and Maidenhead. In addition, a 13-mile length of the M4 is

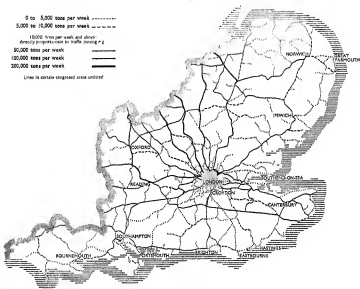


Fig. 20. British Railways: density of freight traffic 1961

Derived from *The Reshaping of British Railways* by permission of the British Railways Board

under construction between Chiswick and Langley and planning for the rest of this motorway is well advanced. New motorways are planned from London to Crawley, to Basingstoke and to Bishop's Stortford, and more by-passes to motorway standard will be built.

21. In selecting places for growth, these improvements in road communications will be of the first importance. The Bishop's Stortford motorway and the improvements to the A12 will give

the south eastern corner of East Anglia much better access to London; while the South Wales motorway will bring added economic strength to areas west of London, giving them easy and rapid communications with the port of Bristol, as well as with London and the coalfields and industries of South Wales.

22. These are the prospects offered by present road plans; but in producing an overall pattern of future growth in the South East it is necessary

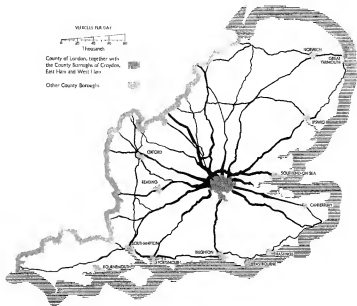


Fig. 21. Trunk roads: density of traffic 1961

Compiled from the Ministry of Transport's Trunk Road Traffic Census. The volume of traffic (represented by the width of the lines) is the average for a 16-hour day over the period 21st - 27th August 1961

of new roads gets under way, it will be possible, to an increasing extent, to shape new road plans to match future needs, for example, new proposals for major changes in the distribution of population and employment. A sense of proportion is needed in this; there is no case for building many miles of motorway for the sake of a remote new town. A single new town—even a big one—would not produce the traffic that would justify all the dead mileage; nor, on the other hand, would the construction of a motorway tempt employers to go to a new town which had no other *raison d'être*.

24. What can be done, however, is to try to determine where likely future developments in the South East will make the case for better roads outside the orbit of London; and, further, to consider how these new, or greatly improved, roads will intersect the London radial system to produce new focal points. Places such as these could be the most promising of all locations for the big new expansions needed, for they will provide new opportunities for growth.

25. One example of this can be seen from the developing need for better communications between Southampton and the Midlands. If expansion takes place on the scale suggested later in this Study at Southampton, and this is linked with the development of Southampton as a port, there will be a growing volume of traffic that will call for something much better than the existing road links, and possibly something on the scale of a motorway. An improved link with the Midlands would intersect the London-South

Wales motorway, and would produce a major cross-road in the Newbury-Hungerford area, which would be another natural growing point.

26. PORTS AND AIRPORTS. Ease of access to ports and airports is obviously a factor of first importance when it comes to selecting growth points and Fig. 22 shows the broad distribution of traffic. As ports, London and Southampton stand out, though the presence of Bristol will add to the attraction of growing points to the west of London, especially when the South Wales motorway is built. This pattern is not likely to change much; although there may be scope for some development elsewhere, major port development in the South East is bound to be concentrated on the Thames and Southampton Water. 27. London has the country's main airport at Heathrow. Gatwick supplements Heathrow by handling short-haul and medium-haul services in the southern sector. The combined capacity of these two airports will be too small in the 'seventies and a third London airport will be needed. This may be established at Stansted, in Essex. This is close to the line of the Bishop's Stortford motorway, and the two together would provide a powerful stimulus for development in this area. Local airports offering a direct passenger and freight service to the continent can also be of great value to commercial employers or manufacturers willing to leave London. Southend, whose airport offers quick and easy journeys to Belgium and Holland in particular, is very well equipped in this respect.

Distance from London

28. There is one other general consideration governing the choice of places for expansion. This is the paramount need to channel as much growth as possible *well away* from London—right outside the South East, where this can be

done. Even within the South East, distance from London is an important consideration. There are many attractive places in the outer metropolitan region, with excellent communications, a fine industrial record, and the ability to attract

commercial employment. But this is an area with planning problems arising from the growth that is already built in by reason of its population structure and the strength of its economy.

29. It is the outer metropolitan region which has taken the brunt of the planning policies deriving from Abercrombie. It contains all the first generation of London new towns, with their young and fertile population, and their new and flourishing industries. It contains some of the first generation of town expansion schemes, too. It has found homes for the London 'commuter overspill' for whom there was no room in the conurbation, and it will have to find homes for many more, as well as for others drawn towards London by the new jobs created there, but who never find a place to live in the capital at all. At the same time, the metropolitan green belt has been established, and big extensions to it planned, thus reducing the amount of land available for development.

30. In the last decade, the outer metropolitan region experienced a population growth of almost 1 million—an increase of 30 per cent. No other part of the country approached this rate of change; and the assimilation of growth on this scale imposes a real strain on local services. Over the period of the Study, the outer metropolitan region is likely to gain over 850,000 by natural increase alone, without allowing for movement into the area from London and elsewhere.

31. In these circumstances, there are strong arguments for keeping further planned expansion schemes out of this area. In practice, this is not likely to be possible. The difficulty of finding enough centres with the advantages necessary to support strong and rapid growth makes it necessary to look to a handful of places in the outer metropolitan region if enough viable schemes are to be got going. But it may be possible to confine these to the outer part of the area.

Planned expansion: the local factors

So far, only broad strategic considerations in the selection of places for expansion have been discussed. When it comes down to places, a great deal more has to be looked at.

New towns

2. In some ways, it is easier to set out the requirements for a good new town site than for a town expansion. It goes without saying that the pre-requisites must be met—it should have first-class communications, or the prospect of them, and be far enough away from London or other major centres of population. The site has to be physically suitable for development; the contours should not be too severe, and the land should not be liable to flooding. Good agricultural land has to be avoided as far as possible. It must be possible to supply enough water to meet the needs of the town, including its

industries, and there must be adequate means of disposing of the sewage effluent.

3. For a large new town of the type contemplated in this Study the aim should be to find sites capable of accommodating 150,000 people—8,000 acres at least. For the biggest schemes, there should be elbow room for later expansion even beyond this figure—physical scope for the growth of a major city.

4. There are few sites in the South East that can pass these exacting tests. If the site stands on good communications and has economic potential, there will almost certainly be a big town on

it already. If there are hundreds of acres of empty land suitable for building, the site is likely to be off the beaten track. To find the sites

needed, it has been necessary to take account of likely new developments in communications. The results are given in the next chapter.

Town expansions

5. Where an existing town is to be expanded, other considerations arise. Again, the pre-requisites of good communications and distance from London must be met; there must be physical space for growth, and water supply and sewerage must not present insurmountable problems. But a great deal depends on the size and economic potential of the town itself, and on its character. One important reason for the slow pace of the present generation of town expansion schemes is the selection of small places for growth on a small scale; even if all had succeeded better, the total result would not have been great.

6. For the reasons already given, the need is for large schemes. This implies large towns to base them on, for the attempt to mount a big expansion on to a small town would, in practice, require new town machinery. The large town has the advantage of a stronger administrative machinery which may either be able to undertake expansion (with suitable reinforcement), or which can co-operate effectively with another agency in doing the job. The presence of all the public services and a good shopping centre makes it possible to embark quickly on a big programme of house-building. If there is industry in the town which can expand, given the labour, there will be less need for mobile industry. The population structure (unlike that of a new town in its early years) will include the school-leavers needed by office employers—and one of the big needs is to find places where offices can go to from London. Above all, it is likely to become an effective growing point more quickly than a small town being expanded, or a new town.

7. The search has, therefore, been concentrated on towns which could support a growth of at least 30,000 *over and above* the natural growth that could be expected in the town. This has been taken to mean that the likely places are those of present population of 50,000 and over (bigger towns can be looked to for more than 30,000 growth—perhaps 50 per cent of present population). Smaller places which seemed *prima facie* to offer special advantages have not been ignored (e.g. the small ports), but, by and large, these offer little prospect of rapid large scale growth.

8. Nor has the search overlooked the possibility of schemes outside the boundary of the Study area; and there are indeed three important proposals which do fall outside. Others were looked at but they failed on physical or economic grounds. Big and successful developments may take place in other parts of the country which could help to bring about a better national balance of population. But such schemes fall rather under the description of efforts to retain population in other parts of the country.

9. There are various ways of measuring the character and potential of a town, some subjective, some objective. As a practical matter, subjective tests are not to be despised, for they may greatly influence employers' choices when it comes to making a move. Right or wrong, this is something that has to be allowed for.

10. A more objective test is provided by the rateable value of the town, and of the different elements in it. This gives a measure of the industrial or commercial strength of a town, of

the size and attractiveness of its shopping, and of the entertainments it can offer. One important feature thrown up by an analysis of this kind is an indication of the extent to which the town has proved attractive to office employers in the past.

11. Another test is the amount of industrial employment offered by the town, and the extent to which this employment falls within industrial groups which are expanding quickly, slowly or not at all.

12. This kind of analysis does not and should not lead to a blue print of a standard type of town labelled suitable for expansion. Different towns can justify their selection in different ways, and play a different part in the scheme of things. For example, towns that can attract from London industry which, for one reason or another, is tied to the south; towns with strong indigenous potential for growth, which need the labour offered by a forced growth scheme and will not draw on the limited pool of mobile industrial employment; towns with little industrial potential but which may be especially attractive to office workers and employers.

13. Moreover, however strongly a theoretical analysis may point to a particular place, there may be overriding reasons against it. There are clearly some towns in the South East which,

though otherwise attractive, already have problems to which it would be unwise to add by means of a forced growth scheme. Oxford, Cambridge and Brighton are three examples.

14. In the next chapter, details are given of a number of towns in the South East which seem, *prima facie*, to offer possibilities of large scale growth. Just how much growth, at any one of these places, must depend on detailed physical surveys and discussions, which must be undertaken as soon as it is agreed in principle that a scheme should be considered. These will have to cover such questions as the availability of land for housing and industry, the burden placed by population growth on the services of the town as a whole, and the cost of expanding these to meet a rapid rise in population and traffic. The demands which this growth will place on the communications system will need to be examined with great care. Schemes for the development of these towns will have to be planned to deal adequately with the problems arising from the great increase in the number of cars dealt with in the Bucbanan Report. It may not be a question of adding new developments to the periphery of existing towns laid out on the traditional pattern. It may instead be necessary to create new forms of town structure which make full provision for transport needs.

Studies by consultants

15. Some pilot studies have been carried out. In the autumn of 1962, the Government commissioned three firms of planning consultants to investigate the planning and financial problems likely to be encountered in the rapid large scale expansion of big towns. Three towns were chosen for this exercise, two (Ipswich and Peterborough) which figure in this Study and one (Worcester) which has been regarded as a possible candidate for the reception of overspill from Birmingham.

16. None of the three studies—made independ-

ently by the three firms, which took a town each for theoretical study—discloses insuperable practical difficulties in expansion on the scales envisaged—50 per cent and 100 per cent spread over 15 years or 25 years. The estimates of total costs vary considerably. In part this can be accounted for by the differing degree to which the town centres and existing road networks of the towns were judged to be capable of dealing with 100 per cent more people and up to 200 per cent more cars; but the variations also arise from

differences among the consultants on the extent of the measures recommended to cope with such growth. All disclosed that central area redevelopment was a very significant element in the cost of expansion.

17. As might have been expected, variations in the difficulty and cost of expanding these towns stem from physical considerations peculiar to the particular town: on such factors as the relative ripeness for redevelopment of the existing town centre; the extent to which works on improving public services, the main road network and the town centre would have to be undertaken even if no steps were taken to bring about forced growth; and the room for manoeuvre in selecting areas for residential and town centre expansion which can be economically developed.

18. The particular solutions chosen also have a bearing on cost. For example, in one case the consultant proposes that an entirely new town centre should be built with the road network at a different level from the present one.

19. Certain broad conclusions can, however, be drawn from the studies. Variations in physical considerations and in the choices available in providing for town expansion, between one town and another, suggest caution in attempting to generalise about costs of achieving forced growth of this type. All three studies indicate that the cost per person of doubling the size of the town is less than the cost of expanding it by only 50 per cent. The critical factor in cost variation is the extent to which forced growth makes it necessary to undertake town centre redevelopment and improvement of the town's main road network, on an extensive scale, well before this would occur if the town were left to grow naturally. The need to adapt our towns to a very great increase in car ownership and usage, in the next decade or two, will call for some fundamental and unconventional thinking on the design of large towns and this will be particularly necessary where forced growth of such towns is envisaged, as in this Study.

Other considerations

20. **WATER SUPPLY.** In all these schemes water supply will be of particular importance, and a separate water supply study is being made in parallel with this planning Study. While there is no reason to fear that enough water cannot be provided to meet the needs of the growing population of the South East, present sources of supply, as now developed, will not be adequate; major new schemes will be required. In some areas (particularly south Essex) the supply is already short. The need for more water will affect the timing of new expansion schemes in some parts of the South East and, in some areas, may limit the number of schemes or the scale of expansion that can be undertaken in the short term. The question of water supply is examined in

more detail in Part Three (Appendix 1), page 105.

21. **AGRICULTURAL LAND.** The South East has an unusually large proportion of good agricultural land. Some of the best of it, e.g. the Fenland soils, does not offer particularly attractive sites for urban expansion; but in many parts of the region the areas most desirable for development are those of particularly high agricultural quality. Good farmland can often be saved by diverting expansion to one side of a town rather than another, but sometimes there is no easy way of reconciling agricultural and other planning interests and it may then be necessary to avoid or defer large scale growth, if the programme can be made up elsewhere.

Conclusion

22. These then are the pointers and the limiting factors that govern the choice of places for expansion. Perhaps the most important has been left until last—the willingness of the local people and of the local authorities to undertake or collaborate in a scheme of this kind. That is why an examination of this nature can be neither exhaustive nor decisive. It is merely the first stage in a process of consultation and discussion, in the course of which many additional factors will have to be taken into account, of which one will be the views of people who would be

affected by the schemes.

23. Chapter 13 tries to convert the ideas into places. It may well be that expansion may not prove possible at some of these places either on the scale suggested or at all. It may be that other places will be proposed by the local planning authorities for large scale growth. But the essential point is that, if the population increase in the South East by 1981 is to be dealt with and if growth is to be drawn away from London, something of this order is needed.

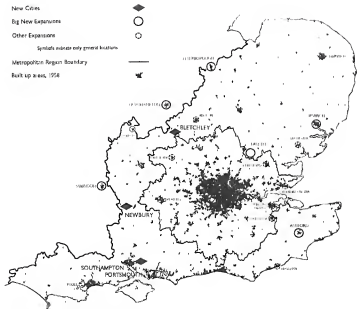


Fig. 23. Areas suggested for expansion

The symbols are diagrammatic only and are not intended to represent the actual location of any planned expansion (see Table IV, page 73)

Places for expansion

CHAPTER 11 set out the main principles that have been followed in the selection of places for expansion. Before these generalisations can be followed up with specific suggestions, some reservations must be made.

2. First, in order to be sure that major schemes of development could be carried out on the scale suggested, detailed examination of all the possible places would be needed. This means more than a physical survey. Particularly where an existing town is to be expanded, a thorough analysis of the consequences of planned growth must be undertaken, which would include not only a straightforward planning survey, but a close examination of the financial effects.

3. With the agreement of the local authorities concerned (who, in giving their agreement, did not commit themselves to the idea of expansion) pilot studies of Ipswich and Peterborough have been carried out, and equally thorough investigations will need to be made of other places before it can be decided whether they offer a firm base for large expansion and, if so, on what scale. The

other places mentioned in this chapter have not been subjected to such a detailed examination. But each of them is a probable candidate in the sense that there are considerable opportunities of one sort or another, and that there are no obvious physical limitations to growth or insurmountable difficulties in the way of providing the necessary public services.

4. Secondly, the success of any expansion scheme must owe a great deal to the co-operation of the local authorities and the good will of the local inhabitants, and this implies full discussion and consultation *before* final decisions are taken. It may be asked why this Study, after so long a period of investigation, does not lay down 'solutions'. That is the answer. Each one of the proposals made must be fully discussed with the local authorities and other bodies concerned.

5. The Study does not suggest the direction which expansion might take in the neighbourhood of any of the places mentioned. In all cases, this would have to be considered in relation to many factors, of which one would be the whereabouts of the best agricultural land.

6. It cannot be over-emphasised that the mention of a place in this chapter does not imply a firm view that large scale expansion is necessarily practicable, or even, when the full facts are known, necessarily desirable. The list which follows is intended simply to offer a starting point for discussion and consultation. In it, tentative estimates are given of the scale of expansion that may be possible, over and above growth which will take place in any event by excess of births over deaths. Estimates are also given of the amount of growth that may be possible by the end of the Study period; but this estimate is dependent not only on the physical and economic scope for expansion that may be

revealed by more detailed examination, but also on the starting date for any particular scheme and its programming.

7. The list of places is broken down into three sections. The first covers the biggest schemes which offer the best prospects of producing self-generating growth well away from London, and where, in the course of time—well after the end of the period of this Study—the development may grow to the scale of a new city. The second group consists of places where the prospects for growth, though not on the same scale, are still considerable; they, too, should exert a powerful pull on population and employment that might otherwise gravitate towards London. The third group comprises the remainder; places where the economic potential is less clear, or where there may be other difficulties, but where it should nevertheless be possible to mount expansion schemes substantially larger than those of the current programme.

The new cities

8. The **Southampton-Portsmouth** area already has a population of three-quarters of a million, with a strong natural growth, and an economic potential centring on the port. It has excellent deep water facilities, and the Rochdale Committee on Ports¹ has recommended that it should be built up as a major cargo port.

9. Whether or not the port is expanded in this way, there is little doubt of the area's economic potential. Development of the port would allow expansion to take place more easily, but, even without this, the area should be capable of growth on a scale sufficient to make a significant contribution to the solution of the South East problem.

10. The form of development would require careful consideration. Both Portsmouth and

Southampton have populations of over 200,000 already; Portsmouth has its own overspill problems. But, by looking at the whole belt of country from the north of Southampton to the north of Portsmouth, it should be possible to find room for simple expansion at more than one point. A detailed study will be required to produce a further assessment, but there seems no reason why the area should not eventually have a population increase of a quarter of a million, over and above its own natural growth, and 150,000 of this might be achieved by 1981 if two or three centres can be developed simultaneously.

11. Apart from purely economic considerations, the whole area is the only one in the South East which can at present compare with the Greater London conurbation. Portsmouth and South-

¹ *Report of the Committee of Inquiry into the Major Ports of Great Britain* (Cmd. 1824). (H.M.S.O., 15s.)

ampton are the leading towns outside London in both total population and total rateable value. Both have excellent shopping centres, and are well provided with hotels; there is a university at Southampton. In terms of rateable value, Southampton has more offices than any town in the South East, outside London.

12. Southampton is 77 miles from London, and communications will be considerably improved by the building of the M3 which is already planned as far as Basingstoke, 30 miles from Southampton. It should be possible in due course, to provide an excellent link between the

Southampton-Portsmouth complex and London by means of this road.

13. Birmingham is 128 miles from Southampton, and development of the area and the port would call for improvement of the communications with the West Midlands.

14. The Bletchley area is near the main lines of communication (including M1 and the main railway line, which is being electrified) between the West Midlands and London. It would be difficult to find an area which would be more attractive to industrialists. There should be no trouble in finding enough employment for a new

Areas suggested for expansion

TABLE IV

	<i>Population 1961</i>	<i>Estimated natural change 1961-81</i>	<i>Possible scale of increase</i>	<i>Possible progress by 1981</i>
	(1)	(2)	(3)	(4)
A. New cities				
Southampton/Portsmouth area	750,000	144,000	250,000	150,000
Bletchley area	17,000	4,000	150,000	75,000
Newbury area	20,000	3,000	150,000	75,000
B. Big new expansions				
Stamsted (Essex)	—	—	100,000	75,000
Ashford (Kent)	28,000	3,000	100,000	75,000
Ipswich	120,000	19,000	60,000+	60,000
Northampton	100,000	7,000	100,000	50,000
Peterborough	60,000	7,000	50,000+	50,000
Swindon	90,000	14,000	50,000-75,000	50,000
C. Other expansions				
Aylesbury	27,000	6,000	All of these places seem to offer scope for an expansion of at least 30,000. At some of them, (e.g. Chelmsford and Southend) considerably more; though some of the growth could not take place before 1981.	
Banbury	21,000	3,000		
Bedford	65,000	8,000		
Chelmsford	50,000	7,000		
Colchester	60,000	8,000		
Hastings	65,000	-2,000		
Malden	60,000	8,000		
Medway Towns	170,000	24,000		
Norwich	120,000	14,000		
Poole	90,000	9,000		
Reading	120,000	16,000		
Southend	165,000	8,000		

NOTES

- Targets for planned increase (columns 3 and 4) are additional to natural increase (column 2).
- At some of the places mentioned town expansion (initially as a small scale) is already proceeding. They are Ashford, Aylesbury, Bletchley and Swindon.
- The estimates of natural change are provisional, and are made on the assumption that these places will continue to receive the same share of the total natural growth as they have received in recent years.

town here, and a large and successful development should be possible. There is plenty of room for building, and, in the very long term, a new city of a quarter of a million might arise. By 1981, a growth of 75,000 might be achieved.

15. The existing town of Bletchley had a population of only 16,900 in 1961, and there is not a sufficient base for building up the area by means of expansion of the existing town. The growth potential of the area's existing industry is only moderate, but the natural economic advantages of the location should ensure the success of a new town.

16. Bletchley already has an agreement with London under the Town Development Act for the reception of over 10,000 people, and has received a population increase of over 5,500 under this scheme.

17. The Newbury-Hungerford area lies on the main line of road communication between London and Bristol, and is roughly equidistant from these two centres. Its communications will be still further improved when the M4 is completed. The M4 will also provide an excellent link with the South Wales industrial complex.

18. The advantages of the area are further increased by its strategic position on the main link between the West Midlands and Southampton (A34). Newbury is only 40 miles from Southampton, and a major development there would obviously tie in well with expansion at Newbury. If, in time, development at Southampton led to the improvement of communications between the port and the West Midlands, the cross roads with the M4 would be in the Newbury area. These developments could give Newbury an even larger potential than Bletchley. It should be possible to plan initially for a population increase of something like 150,000, with hope of growth to a quarter of a million later; and to achieve 75,000 of this by 1981.

19. As with Bletchley, the existing nucleus of development is small—20,000 at Newbury itself. There is no great existing industrial potential in the area, but the natural advantages of its position should make up for this; again, for this reason, any major development would have to take the form of a new town. One drawback is that much of the surrounding area contains farmland of high quality.

Other large expansions

20. In addition to these *three* new cities, there are *six* places which might provide scope for expansion on a considerable scale—of the order of 50,000 to 100,000, over and above the natural growth of each area.

21. Four of these are based on big towns well away from London. One is Ipswich, 72 miles from London and in an area which has not so far experienced the exceptionally large population and employment increases which have taken place to the west and north west of London. The others—Northampton, Peterborough and Swindon are all over 65 miles from London, and outside the boundary of the Study area. Northampton

and Peterborough enjoy excellent road and rail communications with the midlands and the north, as well as with London. Swindon is the outstanding example of a successful town development scheme. The fact that it has been able to do this, at a distance of 80 miles from London, and with its own problems of declining employment in the railway workshops, is an indication of its economic potential.

22. The siting of two other big schemes is largely dependent on other developments. The proposed Channel Tunnel makes development in the Ashford area, where the main railhead is likely to be, an attractive possibility. This

development might be on a scale far greater than that of the present small town expansion scheme and might take the form of a new town. If the Government should decide to establish a third international airport for London at **Stansted**, in Essex, the employment directly and indirectly

generated would provide the initial impetus for a new town in this general area, and its development would be further stimulated by the construction of the Bishop's Stortford motorway. At both Ashford and Stansted, the target population might be of the order of 100,000.

Other expansions

23. The other places mentioned in Table IV are suggested as suitable bases for expansion, judged by the criteria set out in Chapters 11 and 12. In varying degrees, they enjoy the advantages of good communications and potential for employment growth of one kind or another. Several seem particularly well suited to attract office employment away from London, and three are university towns. At these places, it seems likely

that there is both economic potential and physical scope for expansions of the order of 30,000 by 1981, and at some of them perhaps a good deal more. At certain places—and this applies also to those suggested for larger scale expansion—it may well be that some of the housing land required could suitably be found in neighbouring towns and villages. This will depend on physical circumstances and on communications.

Further growth of existing new towns

24. So far, the establishment of a number of new towns, and the setting in motion of large scale town expansion schemes have been suggested. At some of the places mentioned, town expansion schemes of the old type are in progress, but what is now proposed would involve virtually a fresh start. 25. The situation is rather different with the current new towns. At some of these there are physical possibilities of further growth—though, in some instances, this will involve an extension of the designated area. The advantage of planning for further growth at a new town now being developed is that the scheme can get away to a quick start. The prospect of economic success is not in doubt at the London new towns, and there is in being an organisation to plan and carry

through the development, which can follow on from present targets without interruption.

26. At **Stevenage** and **Harlow**, the development corporations have made technical examinations of the possibility of further expansion. Both towns are planned to take an eventual population of 80,000, but the corporations consider that they could be expanded, without detriment to the structure of the town, to accommodate an eventual population of 130,000–140,000 at Stevenage and 120,000–130,000 at Harlow. If it is decided to go ahead, these two new towns would provide an additional capacity of about 100,000.

27. There is also some scope for expansion at **Basildon**, **Crawley** and **Hemel Hempstead**. The

assets of the last two of these have already been handed over to the New Towns Commission. There is therefore no development corporation to carry through the further expansion, although the Commission has certain powers of develop-

ment. If, however, the amount and the rate of growth at these two places is not too great there is no reason why they should not expand naturally, like the other towns in the South East not picked out for forced growth.

Centres for office dispersal

28. The whole strategy of decentralisation from London will be undermined if commercial employment cannot be got away from the capital. The first aim must be to get offices a really long way away from London and the success of some of the Government's own staff dispersal moves shows that some offices can be moved right out of the South East.

29. In the South East itself, many of the places proposed for expansion in this chapter will be very suitable for office dispersal, and have been chosen with this in mind. A new town, in its early years, cannot easily provide the surroundings and the type of labour needed by a commercial employer; for some years, therefore, the town expansion schemes will have more to offer. Of the bigger ones, Southampton, Ipswich, Northampton and Peterborough should be particularly attractive to employers; and among the others Aylesbury, Chelmsford, Hastings, Maidstone, Norwich, Reading and Southend. The comparative nearness to London of the first generation of new towns will be useful to employers who cannot go further afield. Moreover, they are reaching a stage in their development at which they can support strong office growth. In the early years, their unbalanced age structure (illustrated in Fig. 24) made for a shortage of young people seeking office work; but from now on the school-leavers will be coming forward in large numbers. There would be advantage in planning and presenting all these places as major office centres, to be preferred, in the long run, to those nearer London.

30. But the scope for office development in the

South East is not limited to places where forced growth is planned. Much office work is done by young people and by married women, and for many firms local recruitment will meet most of their needs. The provision of a home with a job will be needed for only a few key workers, particularly if the move is of routine operations being hived off from a head office. There are many towns in the South East that would fill this bill without the setting up of any formal arrangements. Many of the south coast towns fall into this category. Some of them have seasonal unemployment; and their character will be attractive to staff who are transferred from London. Some moderate growth of office employment would also be reasonable at a handful of towns in and near the green belt; such work would offer an alternative to commuting for those living in and near them. These places might include Tunbridge Wells, Tonbridge, Sevenoaks, Reigate, Guildford and Maidenhead. The other sectors around London are well covered by the existing new towns and proposals for new expansions.

31. Finally, there is the problem of the firm which can accept a location on the periphery of London for some or all of its staff, but has a need for such close contacts with its own or other organisations in the City or the West End that it is genuinely unable to go further afield. To argue that *all* new offices should be well away from London and that no new ones should be allowed in any part of the capital or its immediate surroundings is to ignore the existence of this problem, and to risk slowing down the pace of decentralisation. Moreover, the growing im-

balance between homes and jobs in London, and the high cost of providing more transport capacity, point to the need for some good office centres on the periphery. To the extent that

peripheral offices are needed, they should be concentrated in attractive centres so placed that they give as much relief as possible to the transport services.

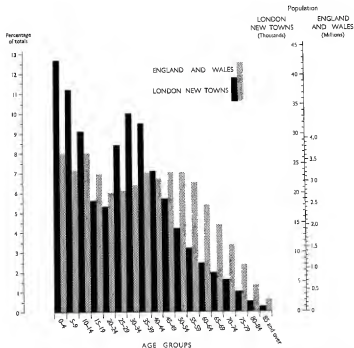


Fig. 24. A comparison of the age structures of the London new towns and of England and Wales as a whole: 1961. From the County Reports of the 1961 Census (see Appendix 2, Table 13)

32. Ideally, these centres should have a fast, preferably non-stop service to a London terminus; good local road and rail communications so that staff can be drawn from people living in the neighbourhood; and a good shopping centre close by. Peripheral centres of this sort can help in easing congestion in the central area and on the last few overcrowded miles on the suburban railways. They should reduce the pressure on the heart of London and, in the long run, help to bring demand down to a point at which central

area redevelopment schemes are held back, and some perhaps abandoned altogether.

33. Where such peripheral office centres should be provided, and their number, must be a matter for consideration by the planning authorities in the first place; but, by way of example, suitable towns might include Ilford, Romford, Dartford, Bromley, Croydon, Surbiton, Kingston, Uxbridge and Watford. At some of these—Croydon, in particular—a good deal of building has already taken place or is planned.

Summary

34. In short, this Study suggests that, subject to detailed examination and full local consultation, the need to draw people and jobs away from London, and to provide homes and work for about 1½ million people (over and above local growth) might be met by a programme consisting of:

(a) 3 new cities (Southampton/Portsmouth, Bletchley and Newbury);

(b) 6 big new expansions (Ashford, Ipswich, Northampton, Peterborough, Swindon and Stansted);

(c) 12 other schemes on a substantial scale;

(d) growth beyond the present population targets at some of the present London new towns.

Of the new schemes, those at Bletchley, Newbury, Ashford and Stansted would be new towns, and the others town expansions. In addition, certain other towns should consciously be built up as office centres.

35. It is hazardous to try to assess whether all

these schemes, coupled with developments already under way, will provide for 1½ million people by 1981. At this stage, nobody can tell how many of the new schemes will survive the processes of detailed examination and consultation; there are likely to be casualties. It is difficult also to try to estimate how much progress might be made with each scheme by 1981; this can be little better than guesswork. A lot of work will need to be done on timing and programming after decisions in principle have been taken. But, even on the assumptions that all the schemes went ahead and did well; that all the present new towns and town expansions proceeded successfully; and that additions to the population targets of some of the existing new towns were approved—the total capacity that would be realised by 1981 does not amount to more than 1½ million. This is too narrow a margin for comfort; and if any of the bigger new schemes should meet with difficulty, there would have to be a search for substitutes.

Timing

36. For practical reasons, it is unlikely that the greater part of the development envisaged in this Study could take place until the 'seventies, and it is during that decade that the rate of progress in the expansion schemes would reach its peak. First the schemes must be discussed and provisionally agreed—subject to full examination by local inquiry; outline and then detailed plans must be drawn up; and the statutory processes of designation and land acquisition must be gone through. After all that, it will take time before the building rate touches its maximum.

37. Nevertheless, not all the problems of the South East will wait until the 'seventies. The population growth is happening now; and, above all, the rapid rate of employment increase in

London is presenting ever widening problems. It will take time to check this increase, and it will help if an early start can be made at a few places—for example, those which might draw commercial employment from London—to reinforce the effect of the current programme for new and expanded towns.

38. Two candidates are the existing new towns of Stevenage and Harlow which might well be increased in size; the machinery is there, and the preliminary planning has been done. There are also possibilities of early action at Swindon, where town expansion is already in progress. Peterborough and Ipswich would also have a head start because of the detailed surveys that have been carried out at these towns.

Expansion schemes and employment

THESE suggested schemes of planned expansion will not work unless enough employment is available—at the right time, and of the right kind—for the people for whom houses are being provided. With the first generation of new and expanded towns, the emphasis was on providing the employment needed by the transfer from London of manufacturing industry. There will still be a need for this; but in the future there should be less emphasis on mobile industrial employment and much more on other sources of work.

2. An important question is whether enough jobs can be provided in the South East without prejudice to the development of other parts of the country. The build-up in those parts will depend on the continued diversion to them of all possible mobile employment, through industrial location control and through the fiscal and other financial benefits provided. In the competition

for mobile employment, these areas must continue to have priority over the South East—not only for their own sake but also because failure to stimulate growth in the less flourishing parts of the country will lead to more southward migration and consequently a bigger problem in the South East.

Manufacturing employment

3. What was said in Chapter 4 about the industrial structure and the geographical advan-

tages of the South East suggests strongly that, on present trends, there is unlikely to be any overall

shortage of jobs. As far as the South East is concerned, therefore, the problem is likely to be the redistribution of employment growth from the congested areas in and around London to the new expanding centres. The magnitude of this task of redistribution must not be underestimated.

4. The scale of employment that would be needed for the schemes suggested in the Study is greater than that required for the existing new and expanded towns, and there is little mobile expanding industry in London itself. There may be more possibilities in the outer metropolitan region, where there has been rapid growth in industrial employment in recent years. But the prior claim for any mobile industry lies outside the South East altogether.

5. One weakness of the present situation is that there are very few attractive alternatives for a firm wishing to expand in the London conurbation and unable to move out of the South East altogether. There are possibilities in the existing new towns and in expanded towns; but most of the current expansion schemes are on too small a scale to attract some employers. There are some firms who can satisfy the Board of Trade that there are genuine reasons—unusually close links with particular suppliers or markets, for example—which prevent them from going further afield. In such cases, there is an unenviable choice between allowing the growth to take place in London and preventing it altogether.

6. Given a wider selection of places to go to, it seems likely that more firms could remove some of their operations from the conurbation, thus adding to the total pool of employment on the move. Experience in the new and expanded

towns suggests that a transfer yields more jobs, over and above those that might have been created had the firm been allowed to stay in London, because the combination of new premises and housing for workers acts as a stimulus to productivity, and because there is *room*—in the physical sense—to expand. With a wider choice of destinations, too, it should be easier to persuade whole firms—not merely expanding branches—to leave the conurbation, and to take a tougher line with managements who can show good reason for opposing longer range moves. The stimulus to growth provided by the expansion of strongly growing centres of the kind envisaged in this Study should therefore add to the total amount of mobile industry, and make it easier to find the employment required for the increasing population of the South East without doing this at the expense of other parts of the country.

7. If much of the planned expansion takes place by means of expansion of existing towns rather than new towns, there will be some stimulus to local employment. Analysis of the experience of some of the smaller expanded towns suggests that there is considerable growth of local jobs from small expansions in such towns; for every nine jobs imported into the towns concerned, four have been created by the growth of local industries. Experience with larger town expansion schemes might not be the same, but this gives some measure of the pool of local growth which might be released by expansion schemes. The selection of towns with potential for growth by reason of their industrial structure will reduce the need to introduce industry from outside.

Growth of service employment

8. Over and above this stimulated growth of local manufacturing industry, town expansions and new towns will create a considerable growth in service employment. There are some purely

local services which grow with the population of an area. To this extent, town expansion helps to provide its own employment. In England and Wales, over two-fifths of all jobs come from such

local services; in the South East outside London the share is almost a half. Secondly, there are national and regional services many of which are tied to the areas of greatest population, in that the increase is in ratio to the population growth.

Decentralisation of offices

9. There is the further aim of getting a lot of office employment out of London. This subject has been discussed in other chapters and it is

The growth of the South East from natural increase alone is therefore likely to stimulate the creation of jobs in service industry, which cannot be moved away to help the areas of unemployment.

Timing

10. It must be emphasised that it would take years to negotiate, plan and start to build the large expansions suggested in this Study. As compared with commitments elsewhere, notably in Central Scotland and the North East (where

sufficient to repeat here that there should be more long range transfers to big centres of expansion outside London.

Conclusion

11. A good deal of the employment needed can be found in service industries, including office employment, where there is little clash of interest between north and south; by the development of latent industrial potential in towns chosen for

programmes are already being implemented), the proposals in the Study will not start to make significant demands on employment until the 'seventies.

expansion; and by taking advantage of any growth held back under existing circumstances because firms cannot transfer their activities outside the South East. Even so, a considerable effort will be needed.

Land allocations

THIS part of the Study has so far concentrated on the big new expansion schemes. But these would deal with only about a third of the total population increase expected in the South East. This leaves the greater part of the growth to be dealt with by *normal* planning processes—by the allocation of more land in the development plans of local planning authorities.

2. Since the London conurbation is unlikely to house more than its present population over the period of the Study and will in fact have an

overspill of about 1 million, the rest of the South East will have to accommodate 3½ million extra people. The total is made up as follows:

Population growth outside London 1961–81 TABLE V

	<i>millions</i>
London overspill	1.0
Net migration gain	1.1
Natural increase outside London	1.4
Total	3.5

3. Of this total, 1½ million should be accounted for in planned expansion schemes of one kind or another—1-1½ million in the new schemes sug-

gested in this Study (including additions to the population targets of the existing new towns), and over a quarter of a million in the current

programme for new and expanded towns. The total growth is, of course, significant for the local authorities of the South East, for public services of every kind must be provided. But when it comes to making land allocations, the new and expanded towns fall into a special category; they will call for the preparation of separate master plans or town maps as each expansion scheme is agreed. For that reason, they stand a little to one

side of the normal process of development plan reviews.

4. Leaving aside this $1\frac{1}{2}$ - $1\frac{1}{2}$ million which requires separate treatment and which covers much of the overspill and migration, the local planning authorities outside the London conurbation need to allocate, as part of their review of their development plans for the period ending in 1981, land for over 2 million people.

The needs to be met

5. This total of about 2 million is made up of three elements, and its composition to some extent governs the areas where the land should be made available for development. The *first* consists of the natural increase of the population living outside London, and is spread over the whole of the South East. The *second* is migration for retirement; this is localised and the effects are felt most strongly in some towns on the south coast. The *third* is voluntary overspill from London; the Londoners who move out privately, rather than in planned overspill schemes, many of them continuing to work in London. The main brunt of this type of movement falls on the counties immediately surrounding London in the outer metropolitan region. Over and above this, some allowance must be made for contingencies.

6. **NATURAL INCREASE.** In calculating the natural increase to be expected in the area of each local planning authority in the South East, the method adopted in Chapter 5 for regional population projections has been used. The rate of future increase has been based on the rate of growth experienced in each area over the period 1956-62. This method makes allowances for the change in population structure caused by migration, and is particularly useful in giving warning of areas where a big turnover of population may lead to unexpectedly heavy rates of natural increase. Conversely, this type of calculation

brings out those areas where inward migration of elderly people for retirement has resulted in a population structure which gives a very small rate of natural increase, and very often an excess of deaths over births. A word of warning is necessary, however. While this technique can be applied with confidence to large units of population, such as the South East as a whole, the results must be treated cautiously in their application to smaller areas—for example, to a single town or a small county.

7. **VOLUNTARY OVERSPILL.** Of the other elements of population growth for which land must be allocated, spontaneous movement out of London represents a demand mainly on the inner parts of the Home Counties adjoining the conurbation, because a large part of it is commuter overspill. Though some people working in London are prepared to face longer daily journeys, the greater number of the commuters will seek homes in the outer metropolitan region. Allocations of land for this purpose will, above all, need to match the transport services; extra land will be needed where there is at present spare capacity on the railways and more will have to be allocated in those sectors where rail improvements are decided upon.

8. **RETIREMENT.** The main weight of migration for retirement falls elsewhere in the South East.

The heaviest provision of land for this purpose will have to be made by the coastal counties and county boroughs.

9. **CONTINGENCY ALLOWANCE.** While a primary aim of the expansion schemes is to divert migrants from London, and while the estimated rate of migration for work to the South East has been taken as one pointer in arriving at the size of the expansion programme, it would be naive to expect that every migrant from outside the region will find his home in a new or expanded town. Movement is going on all the time; and the possibility has to be faced that, because of planning or investment difficulties, the full programme may not be realised by 1981.

10. For all these reasons, allowance must be made in development plans for the fact that there is likely to be some migration for work to those areas where employment is growing strongly. This is very important in the outer metropolitan region, where the pull of London is likely, in the shorter term at any rate, to create an

additional demand for housing land. Some flourishing towns in the South East which are not suggested for expansion will also continue to draw in migrants. In the South East as a whole, an allowance of about a quarter of a million might reasonably be made under this head.

11. There are more general reasons for making land allocations on a generous basis. Errors are inevitable in estimating needs over a 20-year period; if they are under-estimated, artificial land shortages are created and land prices are forced up unnecessarily. Builders, seeing that their needs are not being met, are tempted to hoard land against future needs, and there is a risk of starting a vicious circle of shortages and rising prices in the very areas where building land is most needed. Even where the situation is easier, some choice is needed; it is poor planning to attempt to equate demand and supply exactly. The risk of over-provision is very slight, as population trends are now going; the worst that might happen is that the land might be developed a few years later than was expected when it was allocated.

Allocations to the planning authorities

12. Table VI makes a provisional allocation of these land demands in the South East outside the London conurbation, county by county. The table excludes the proposals for new expansion schemes and for additions to existing schemes, which will have to be considered individually and separately, and which might account for about $1\frac{1}{2}$ million of the total population increase. This allocation, which falls to be dealt with in normal development plan reviews, covers the balance of just over 2 million people, plus the contingency allowance of a quarter of a million.

13. The table distinguishes between the two main sources of population increase which the

local planning authorities may expect. The first is natural increase; the second is population movement—voluntary overspill from London, and migration for retirement. The contingency allowance is also included under this second head, and the figures have been rounded; for the allocation, area by area, of particular types of population movement must, outside planned expansion schemes, necessarily be speculative.

14. The allocation of population targets to county boroughs presents special difficulty for two reasons. In the first place, some of the county boroughs in the South East have comparatively small populations, and the calculation of natural

TABLE VI
Estimated population changes, excluding planned expansions, South East England outside the conurbation, 1961-81 (Arounsd)

Local planning authority area	Total			Outer metropolitan region			Rest of South East England				
	Population 1961	Change 1961-81		Population 1961	Change 1961-81		Population 1961	Change 1961-81			
		Total	By births and deaths		By other causes ¹	Total		By births and deaths	By other causes ¹	Total	By births and deaths
All areas	9,614.2	2,235	1,345	890	4,269.1	1,385	870	515	850	475	375
Bedfordshire	379.9	105	93	12	206.4	60	56	4	45	37	8
Berkshire	381.7	146	100	29	226.0	96	57	22	50	43	7
Reading	120.4	144	100	44	120.4	139	97	42	5	3	2
Buckinghamshire	484.7	40	28	12	431.2	—	—	—	187.7	40	12
Cambridgeshire	187.7	30	18	12	—	—	—	—	308.9	18	12
Dorset	308.9	30	18	12	—	—	—	—	88.7	15	2
Isle of Ely	88.7	15	13	2	—	—	—	—	318.3	25	19
Essex (incl. Met. Essex)	1,112.5	274	239	38	794.2	230	214	19	—	—	—
Southend-on-Sea	163.7	—	—	—	163.7	50	29	21	—	—	—
Hampshire	744.7	—	161	—	93.1	—	—	—	651.6	132	—
Bournemouth	149.0	—	—	—	—	—	—	—	148.0	—	—
Poole	210.0	267	—	69	—	—	—	—	210.0	21	48
Southampton	203.9	—	36	—	—	—	—	—	203.9	36	—
Hertfordshire	—	263	158	105	681.9	263	158	105	—	—	—
(incl. Met. Herts.)	681.9	—	—	—	—	—	—	—	76.7	19	4
Huntingdonshire	76.7	23	19	4	—	—	—	—	503.6	19	38
Northamptonshire	1,155.5	265	125	137	651.9	205	106	99	30.2	3	—
Kent (incl. Met. Kent)	30.2	—	3	—	—	—	—	—	380.2	50	14
Cantebury	380.2	—	50	—	—	—	—	—	52.6	2	—
Norfolk	52.6	77	2	14	—	—	—	—	119.6	11	—
Great Yarmouth	119.6	—	—	—	—	—	—	—	168.1	47	8
Norwich	168.1	—	51	14	31.5	10	4	6	106.4	13	—
Oxfordshire	106.4	—	13	—	—	—	—	—	222.9	22	11
Oxford	222.9	—	22	11	—	—	—	—	117.2	22	11
Suffolk, East	117.2	26	19	7	—	—	—	—	126.9	19	7
Suffolk, West	126.9	252	99	153	645.1	232	99	153	—	—	—
Surrey (incl. Met. Surrey)	645.1	—	—	—	123.7	45	7	38	—	—	—
Sussex, East	374.4	—	—	—	—	—	—	—	250.7	—	—
Brighton	161.6	60	—	—	—	—	—	—	161.6	—	—
Eastbourne	39.8	—	—	—	—	—	—	—	59.8	—	—
Hastings	66.2	—	—	—	—	—	—	—	66.2	—	—
Sussex, West	400.3	115	—	112	99.2	35	29	6	—	—	—
Isle of Wight	92.3	0	—	4	—	—	—	—	92.3	—	4

¹Other causes' means emigration from London outside planned schemes, migration for retirement, and a contingency allowance.

change is particularly vulnerable to error with small units. Secondly, some county boroughs may be physically unable to provide the land needed for their natural increase or for any newcomers; and this may give rise to local overspill problems. This situation is not a new one, and it should normally be possible for neighbouring planning authorities to settle the matter by direct discussion. The estimates of natural change given in Table VI should not be taken to mean that a particular county borough has enough land to meet any increase mentioned. The changes from other causes have been grouped together on a county basis; again the local allocations of land to meet them may be governed by physical factors.

15. Local planning authorities in the outer metropolitan region may find it difficult, within the context of present policies, to find enough land. They have to provide for strong natural increase; for commuter overspill; for migrants drawn in

by employment growth in London; for the continuation and for the extension of the existing new towns; and, in the outer part of the area, for a few of the new expansion schemes. All this in an area which contains over 200 square miles of green belt, and proposed extensions to it that would take in another 1,200 square miles. The implications of all this growth for the green belt are discussed in Chapter 16.

16. While the finding of enough land to meet the totals suggested in Table VI will be difficult enough in some places, it must be remembered that the totals would be even higher if it were not assumed that the new planned expansion schemes would cater for a third of all the growth in the South East. If for practical or other reasons it does not prove possible to mount a programme of the order suggested in Chapter 10, it will be necessary to increase the scale of provision made by way of local land allocations.

The London Green Belt

THE main problem in the South East is that of accommodating growth. Green belts, on the other hand, are instruments primarily of restriction. Moreover, it is of the essence of green belt policy that the restriction should be permanent. But permanent restriction sits uneasily with the knowledge that steady population increase is likely in the South East, not only during the period covered by this Study, but for as long afterwards as anyone can foresee. Whatever may be achieved by decentralisation, the pressures arising from current growth in and around London are falling in areas which are critical for the future of the green belt. Over the period of the Study, there is likely to be a natural increase of 1 million people in the London conurbation—the area surrounded by the green belt—and a natural increase nearly as great (870,000) in the outer metropolitan region, the ring of mingled town and country in which the green belt and the proposed extensions are situated.

2. There is a real conflict here which will not be solved on the one hand by crying 'inviolable'; or, on the other hand, by scrapping one of the main achievements of post-war planning, which still has a vital role to play.

3. This conflict has led to much public discussion of the purpose and function of the London green belt, and to some criticism of its boundaries. Critics argue (with some force) that the popular idea of the green belt as a playground for

Londoners is belied by the facts; that much of it consists of airfields, hospital grounds, water reservoirs and agricultural land, to which the public have no access. They can say, too, that a large part of the green belt is far from being fine landscape—gravel pits, some of the small holdings and market gardens and the indeterminate and characterless type of land which can be found in places on the fringes of London. Some maintain that parts of the green belt have lost their

original purpose and are little more than high-class residential areas defended for property reasons.

4. There are good answers to many of these arguments. Nobody need be ashamed of a green belt that includes the Chilterns, the Surrey Hills and the Thames Valley; and the existence of semi-urban uses in the green belt is no reason for building on it. Land is needed for the sports grounds, the hospitals and the water reservoirs; the green belt must not only meet these current needs, but provide a future reserve for uses of this kind. Quite apart from the preservationist reasons for defending the green belt, positive planning requires that a large part of its area should not be built on.

5. But it is less easy to explain the value of some

parts of the green belt. Not all green belt land need be of high landscape value; any undeveloped land can provide a barrier to prevent coalescence, and open land of any sort can form a useful part of a larger whole. But some of the green belt close to London is not only characterless but unsightly—for example, some of the derelict glasshouses in the Lea Valley, which were described by the Minister of Housing and Local Government as 'no adornment to the green belt'.¹

6. There is also the argument that since the essence of a green belt is inviolability it should be untouchable; that once properly defined, there should be no alterations in its boundaries, no matter how circumstances may change; and that, after the first nibble, there would be no end to encroachment.

A new approach?

7. The advocates of change have put forward two main proposals. The first is to push back the boundary half a mile or so from the edge of the conurbation all the way round. The argument is that this would release a lot of land for development, and make it possible to build homes for hundreds of thousands of people. Even if this were so, the objection to this approach is that a detailed process of selection would inevitably have to be carried out; the exercise could not be done with a pair of dividers. If the half mile belt contained a common, a valuable gravel reserve and land within the approach to London airport (to take three random examples) excisions would have to be made. It might well be that other green belt land, which did not happen to fall within the half mile, could be released for building with far less harm, if any is to go at all. In short, the problem will not yield to blanket treatment. If any green belt land is to be released

for building, this should be done on the basis of detailed surveys by the local planning authorities.

8. The other idea is more radical; it involves abandoning the green belt in its present form, and constructing an entirely new one. This would not take the form of a constricting girdle. Instead, development would be allowed to radiate from London along the main lines of communication in roughly star-shaped fashion; in between, wedges of green would be carried right into the built-up area. This pattern would have two advantages. It would keep town and country separate, but close together, and it would have a flexibility which the present system lacks, for radial development could proceed to meet the demands of the growing population, without destroying the green wedges. The main difficulty about this idea is that it has come too late. If the green belt had first been defined as a

¹ House of Commons *Official Report*, 26th February 1963, Col. 1160

time when the facts of population and employment growth in London were fully known, this might have been the chosen pattern. But in fact, over the last 15 years, a quite different type of

green belt has been drawn up and embodied in plans. A great deal of development has been planned and carried through against this background of a green belt, rather than green wedges.

Demands on the green belt

9. Even in the past, the green belt has never been literally inviolable. Both the local planning authorities, and the Minister on appeal, have found it right to authorise development in the green belt from time to time, either because the facts made an irresistible case for an exception to policy, or because, on close examination, the green belt boundary proved to be indefensible at a particular point. For the future, there are strong arguments for finding more building land to deal with the concentration of growth that is inevitable in the outer metropolitan region; and there would seem to be some land within the green belt that could be developed without real loss. On the other hand, there can be no question of going to the other extreme and abandoning the conception of a green belt around London. This was made clear in the London White Paper:

'The Government believe that the green belt should remain a permanent feature of the planning policy for London. They will maintain the approved green belt without substantial change, and they will make extensive additions to it.' (paragraph 64)

10. Table VI provides a broad estimate of the housing demand which is likely to arise in the outer metropolitan region over the Study period (excluding demands arising from existing or new schemes of planned expansion). If this demand could be met by building *anywhere* in the 40-mile ring around London, there would be no great problem; but much of it is tied to particular places. The green belt and the proposed extensions contain some of the most thriving towns in South East England. These towns and the green belt ring generally can expect strong natural

growth and, on present trends, employment growth that will retain the consequent increase in their labour force and call for more. Even in the smaller towns and settlements in the green belt many of the young people growing up will want local homes. Allocations of land in other parts of the South East will not meet these local needs. 11. Then there are the needs generated by London. Earlier chapters have shown that some part of London's housing needs will be met by a continuation of the process whereby people move out of the capital and find their own homes in the outer metropolitan region. Further, increasing employment in London will continue to make a call for more workers than can live in the conurbation. Some of these will be commuters moving out of London; some will be drawn from the existing population of the outer metropolitan region; and others will be migrants drawn from elsewhere but driven, by lack of space in London, to find their homes outside. For these people, too, allocations of land at long distances from London will not serve. Their homes must be within reasonable reach of a railway line to London—and one which has, or can produce, capacity to spare—and the journey to London should not be excessively long. It is true that some people commute long distances daily, notably from the towns on the south coast. It is one thing to do this as a matter of choice; quite another to be compelled to do so because houses and housing land are not to be found within reasonable travelling distance of London. Moreover, long distance commuting is expensive and it cannot be expected that the ordinary London worker will wish to pay for a daily

round trip of 60 to 100 miles. In 1961, well over 1 million people were entering and leaving the central area daily; but of these, only 17,000 held season tickets from places outside the outer metropolitan region.

12. The nature of the housing demand therefore calls for the allocation of some land close to London, in the ring which contains the approved green belt. In this part of the green belt, the presumption is strongly against change, and, given all the other possibilities, there should be no need to take extensive areas for development. A great deal can be done within the framework of existing planning policies. Local planning authorities were invited by the Minister of Housing and Local Government in 1960¹ to reconsider their practice on densities, and many are now applying new standards. The planning bulletin on residential densities² has shown how modest increases in densities at the lower end of the range, combined with good housing layouts, can produce homes for many more people per acre of land. In the towns themselves, opportunities will arise for the redevelopment of older residential areas; in green belt towns experiencing strong population growth, it is particularly important to secure the highest density that is reasonable in the circumstances of the site being redeveloped, in order to reduce the demand for new land.

13. A good deal could also be done by modest adjustment of town map areas, even in the approved green belt. There must be few places where it can convincingly be argued that it is impossible to allow any peripheral extension, no matter how small, to the area allocated for development. Where there is no danger of one

country town running into another, a small extension of this kind can produce land for many houses without making any serious impact on the general shape of the green belt and without damaging its main functions.

14. In areas outside the towns and other large settlements, there is much less scope for change. In the countryside, there should be no relaxation of the general presumption against development; otherwise there would be no point in having a green belt. But in some villages, there is scope for infilling and rounding off—terms which are notoriously difficult to define and to apply to particular places. What may be permissible is influenced by the shape and composition of the village, the road pattern, the contours and features of the landscape, and the facilities and public services which are available. The design and visual quality of the development proposed will also be of the first importance.

15. None of the methods suggested so far for providing more homes in the green belt ring involves taking land out of the green belt, except perhaps on the fringes of existing towns. But there is also the problem of land on the fringe of London, some of which has little or no value for green belt purposes. Some of this land might make a most valuable contribution towards meeting the land shortage. There are strong arguments for suggesting that it would be better to allow building on land of this sort instead of taking open country further out. The London County Council, with Essex and Hertfordshire, are already examining the possibilities offered by the Lea Valley; and there may be other areas of this kind which should be considered similarly.

¹ Circular No. 37/60, Ministry of Housing and Local Government (H.M.S.O., 3d.).

² Planning Bulletin No. 2: *Residential Areas—Higher Densities*. Ministry of Housing and Local Government (H.M.S.O., 2s.).

Summary on the approved green belt

16. In the ring immediately surrounding London there will be heavy demands for housing land of a character that cannot all be shifted elsewhere. It should be possible to meet most of this demand within existing planning policies—by reviewing towns maps, increasing densities, and encouraging residential redevelopment. Some modest extensions of town map areas may also be called for, on a scale which would neither affect the general size or shape of the approved green belt, nor interfere with its functions of containing the main built up mass of London, keeping separate the country towns outside, and preserving the fine countryside of the Home Counties. A positive examination of villages in the green belt might also yield useful results.

Finally, some of the fringe land on the edge of London might be developed with advantage or at any rate with no real loss; but only in a limited number of places where the character of the land justifies this. Any changes that may be necessary in the green belt will be small, and should be planned as a whole with regard to the final result. As was made plain in the London White Paper, it should be for the local planning authorities themselves to consider initially what areas might be suitable for housing, and to make proposals which can be examined by public local inquiry, bearing in mind the scale of the demand that has to be met and the likely continuance of that demand after the end of the period covered by this Study.

The green belt extensions

17. In the outer ring, covered by the proposed extensions to the green belt, there is much greater freedom for manoeuvre, for the boundaries have not been firmly fixed.

18. Many of the problems are similar. The area will have to meet its share of the general population growth in the outer metropolitan region. There will be strong local growth, and some parts are close enough to London to take some of the growing numbers of commuters. At the same time, there are powerful arguments for strengthening the present green belt around London by making extensive additions to it. Population increases on the scale contemplated in this Study will be no bar to this; but the boundaries of the extensions that are needed should be settled with proper regard to long term needs, for there is clearly a limit to the amount of land that can be and ought to be

allocated for development in the ring which lies closer to London.

19. The danger of spreading the green belt extensions too far afield, and of drawing them tightly round existing development is that, in the long run, population pressures will make it impossible to hold the line. The green belt becomes of less value if each new reassessment makes it necessary to re-draw the boundaries. If the green belt is to be strongly maintained, and if it is to enjoy popular support and respect, its boundaries must be such that they can withstand all foreseeable pressures. This means that land should be allocated for development on a scale that is fully adequate to meet the needs set out in this Study; and further, that some margin of unallocated land should be left in town map areas to meet long term needs without cutting into approved areas of green belt.

20. There is therefore a case for a critical examination of the proposed extensions. The first step is to make the land allocations that are needed and, where this can be done, leave a margin of undeveloped land for later needs. The next step is to consider the shape of the green belt area which can and should be protected in the long term. The approved green belt will hold the physical expansion of London in check. In the extensions the two main aims should be to maintain the separate identity and the physical separation of country towns; and to prevent building on fine landscape.

21. The amount of countryside which needs to be retained to make an effective break between towns depends to some extent on the local topography. In many places, quite a narrow gap may be sufficient, provided that the towns have direct access to a wider sweep of open country in some other direction. Similarly, there is no

rule of thumb for defining valuable landscape. There are some areas of outstanding national scenic value—like parts of the Chilterns—which are obvious candidates for permanent protection; other less well-known features of great local importance, like Sharpshoe Beacon, or Luton Hoo; and stretches of attractive country which need permanent protection, not so much because of their appearance, but because their proximity to a big town makes them both valuable and vulnerable.

22. In other words, in the areas at some distance from London, a positive reason should be shown if it is intended to bring land into the rigidity of the green belt system. There should be a case for acting now; for example, where two towns are close together or where a stretch of good countryside is threatened with urban encroachment that would destroy its scale or diminish its value as a rural lung for town-dwellers.

Use of the green belt

23. Finally, there should be more emphasis on the positive functions of the green belt. The initial aim—namely to halt the indiscriminate urban sprawl of London—has been achieved by the establishment of the green belt as part of the plan for Greater London. A study of the plans for towns and smaller settlements within the green belt ring, and of planning permissions granted for building development outside these urban areas, shows that in general the green belt has been firmly held with relatively little encroachment over the last 15 years or so, notwithstanding the very strong pressures for building.

24. All land in the green belt should have a positive purpose; whether it be its quality as farmland, its mineral resources, its special scenic value, its suitability for public open space or playing fields for Londoners, or for those

land uses generated by the main built-up area, which cannot suitably be located within it—such as reservoirs and institutions needing large areas of open land around them. Most of the approved green belt passes one or more of these tests without argument; but there are in it some areas without character or quality which at present cannot be seen to serve any positive function.

25. There is a need to survey and plan the green belt in a thorough and positive way so that the land in it is effectively used, so that the worthwhile countryside can not only be preserved but enhanced for the enjoyment of Londoners, and so that the opportunities for active recreation, which are increasingly in demand, can be fully exploited. The worked-out gravel pits in the river valleys are a good example of an opportunity to reconcile the demands for mineral

working and disposing of London's rubble and other waste material with positive landscaping and imaginative comprehensive development of areas for recreation in the open air—sailing, fishing, water sports of all kinds, and playing

fields. More public access to enable people to walk through the countryside, and more provision of car parks in suitable places to allow the motorist to stretch his legs or picnic, are other objectives for consideration.

The green belt of the future

26. A re-examination of the green belt and its extensions on the lines suggested in this chapter should lead to a stronger and larger green belt; one which it will be easier to hold secure against the population pressures of the future; and one which will contribute more positively to the health and well-being of 8 million Londoners.

27. There will be understandable anxiety at the thought that some green belt land may be allocated for housing after the counties have reviewed the position. But, in the approved green

belt, any changes are likely to be very small. Much will depend on the ingenuity and determination of the local planning authorities in finding the land needed in other ways—in particular, by reviewing their town maps and raising densities. Some idea of the scale of things can be given by the fact that even if the planning authorities were to decide that they wanted to find homes for as many as 150,000 people in the approved green belt, this would take only 1 per cent of the whole, leaving the other 99 per cent intact.

Investment

IT was made clear at the start that this Study was primarily concerned with *land*—the problem of getting enough land allocated and brought into development to provide for the large population increase which the South East has to face over the next twenty years or so. The Study is not concerned with investment as such. Though the strategy outlined in it would clearly have implications amongst other things for the pattern of investment, it would not of itself make important new calls on national resources. It is much more concerned with the question where necessary development could be carried through to the best advantage.

2. Nevertheless it is clear that in order to meet population growth a lot of money, both public and private, will have to be spent in building houses, schools, shops, offices, factories and roads, and on public services of all kinds. Money will also have to be spent in remedying existing deficiencies in the social fabric and in carrying

through normal renewal. Broadly speaking this is money which will be spent sooner or later, but there are bound to be priorities.

3. So far as public service investment in the South East is concerned, the Study does not in any way imply either increasing it or bringing it forward at the expense of other programmes.

Local costs

4. The main proposal in the Study is that there should be a programme of new and expanded

towns with the object of decentralising growth from London. Land and development costs are

higher in London than elsewhere in the South East. There is a further advantage from steering growth away from London since reduction in the number of commuters reduces and delays the demand for improvements in the transport services.

5. For the reasons explained earlier, it is desirable to concentrate this growth into a number of

large expansions. Studies of the cost of expansion of large towns and the further enlargement of some new towns show that the unit cost of development falls as the size of the town is increased to a quarter of a million (studies have not yet been made of larger towns). In other words, one town of 150,000 costs less than three of 50,000, besides having many other advantages.

Regional costs

6. The local savings from concentrated development are unlikely to be offset by higher regional costs on basic services—water, electricity and gas—since the towns proposed for growth are conveniently situated and expenditure must be made on these services simply to meet the growth in population, however it is distributed.

7. Water supplies require special explanation. Until now water supplies have been locally planned, but in South East England in the future they must be planned on a regional basis. (Details are given in Appendix 1.) It would be desirable to initiate the works required soon since they will take several years to plan and execute, but their cost would be relatively small.

8. The strategy of the Study has been based very largely on the road communications that

already exist in the South East, and on improvements and additions already firmly planned. The most important of these are the motorways to South Wales, Bishop's Stortford and Basingstoke. Little addition to existing plans will be required (or can be expected) during the present decade. In the longer term, as was made clear earlier, there may be a case for improving Southampton's communications with the Midlands.

9. Many of the places suggested for expansion will need good feeder roads to the motorways; where existing towns are to be expanded, such roads would be needed in any event, but it may be necessary to plan them in such a way that they can take more traffic.

London

10. The total transport requirements of London itself will be seen in better perspective when the results of the London Traffic Survey are available. The Survey will provide an invaluable basis for working out developments to London's road system, but the policy of easing central area congestion by the decentralisation of office employment may increase the need for improved lateral communications in the outer areas.

11. On the railways, the main need would be

for improvement of the suburban services. Fairly heavy capital expenditure would probably be needed, but the amount would be less if it proves practicable to provide extra capacity by the rearrangement of services. London Transport might also have to undertake costly improvements.

12. The suggested policy of dispersal from London would probably tend to reduce investment on road and rail together.

Summary and general conclusion

THESE are the main points arising out of the Study:

(i) POPULATION

There is likely to be a population increase of about 3½ million in the South East over the period 1961–81, of which nearly 2½ million will be excess of births over deaths in the South East, and just over 1 million net inward migration from all sources. Further growth—probably at a higher rate so far as natural increase is concerned—is likely after 1981.

(ii) THE LONDON CONURBATION

The heart of the South East problem lies in the strong population and employment growth of London and the area immediately surrounding it. During the period of the Study an overspill of about 1 million from London must be expected. About 400,000 of these will find their own homes outside the conurbation, many of them in the outer metropolitan region, the bread-winners travelling to work in London daily. The remaining 600,000 will need homes and work in towns well beyond the green belt. But, because of natural increase in the conurbation, the population at the end of the period is expected to be close to its present level of 8 million. The number of jobs—particularly office jobs—in London is likely to go on rising for some time.

(iii) LOCAL POPULATION GROWTH

Most of the population growth in the South East can be looked after by normal planning processes; but local planning authorities will have to allocate much more land. Their development plans will have to provide land to accommodate well over 2 million more people by 1981.

(iv) EXPANSION SCHEMES

There should be a second generation of new and expanded towns, conceived on a larger scale than those now being built. The need is for big schemes in locations favourable for growth. They should accommodate London overspill, and should attract some of the migrant population and employment growth that might otherwise be drawn into the London orbit. The biggest of these schemes should, in time, grow into major cities of the future, and act as strong counter-attractions to London. A programme for 1-1½ million people is required.

(v) PLACES FOR EXPANSION

Places where it seems physically practicable to develop major cities are the Southampton-Portsmouth area, the Bletchley area and the Newbury area. New towns might also be built at Ashford (Kent) and Stansted (Essex); and large scale town expansion schemes could be based on Ipswich, Northampton, Peterborough and Swindon. Smaller, but still substantial, additions could be made to some of the existing new towns and to a dozen other towns in the South East. Some of these, and other places, should be built up as prestige office centres to encourage the decentralisation of commercial employment.

(vi) TIMING

It will take time to consult the local authorities and other interests about these schemes, to examine each in more detail to confirm that expansion is practicable, and to prepare a detailed plan. The time for most of the building is likely to be in the 'seventies; some of the schemes would continue to develop in the 'eighties and beyond. But if a handful of attractive schemes can be got going quickly it will ease the pressure on London.

(vii) INVESTMENT

This Study makes no specific proposals for capital investment. So far as public service investment is concerned, what is done in the South East and its timing must depend on national priorities.

(viii) TRANSPORT

Substantial improvements to the London suburban rail services and the London Transport network will be needed. In the rest of the South East, the big expansion schemes rest on the existing pattern of main roads, and on firm proposals to build new motorways. But, in addition, Southampton may need greatly improved links with the Midlands.

(ix) THE GREEN BELT

The London green belt is vital and must stay. But it seems likely that a limited amount of housing land can be found in the green belt without any serious loss. The proposals for extending the metropolitan green belt should be critically re-examined before they are confirmed, but substantial parts of them should be approved.

General conclusion

2. So far as the basic problem is concerned, there is little choice; large population increases in the South East are inevitable. Twenty-year forecasts can go badly wrong; but present evidence suggests that if the estimates made in this Study prove to be inaccurate, they will be shown to be under-estimates.

3. Where the choice does lie is in the type of plan to deal with the population increase. The Study, while recognising the strength of the economic forces which are leading to more and more growth in the London area, takes as its main principle the decentralisation of population and employment. The aim is to break the vicious circle of growth generating more growth in the most crowded and congested part of the South East—not only the London conurbation itself, but the ring around it, which has been experiencing the fastest population growth of any part of the country.

4. At this stage, it is difficult to make any reliable forecast of the distribution of the population growth over the South East; much depends on the number of the planned expansions which can be got under way, and the speed at which they can be developed. But the policy suggested in the Study would produce the kind of pattern shown in the following table, which makes certain assumptions for illustrative purposes.

Distribution of population growth in the South East 1951-61 and 1961-81

TABLE VII

	Population growth 1951-61 (actual)		Population growth 1961-81 (estimated)	
	Number (millions)	Distribution (per cent)	Number (millions)	Distribution (per cent)
Metropolitan region	0.8	63	1.9	54
London conurbation	—0.2	—15	<i>nil</i>	<i>nil</i>
Outer metropolitan region	1.0	78	1.9	54
Rest of South East England	0.5	37	1.6	46
Total (South East England)	1.3	100	3.5	100

This table shows that, in spite of the greater total growth to be accommodated in the South East, a much smaller share of this total would, under the proposals in this Study, be concentrated in the belt around London. The amount of increase there, over the 20-year period of the Study, would be at a slightly lower rate than over the last ten; and the proportion of the total growth which would go to the outer metropolitan region would fall sharply.

5. This would make a start on the road towards a more even distribution of population growth in the South East; and, as the new big cities built up, the change in the pattern of population growth would be reinforced by a gradual shift in the economic balance within the South East.

6. The starting point of the Study was an estimate of the amount of population growth that is likely to take place in the South East; this made allowance for improvements in other regions. Given this estimate, there is an urgent need to make plans now for the accommodation of this large and inescapable population increase in the best way and to make sure that enough land is brought forward to provide for it.

The need for review

7. Nobody who has examined the history of planning in London and the South East since the days before the war can fail to be conscious of the possibility of error and of the possibility of social and economic changes that may overturn basic assumptions. There is no way of avoiding mistakes when planning for a long period ahead; but regular and frequent reviews can give early warning if events are falsifying predictions. These should be provided for.

Part Three

APPENDICES

Water supplies in South East England

A CRITICAL factor for the carrying through of the big new schemes of expansion, and, indeed, in the accommodation of the population increase in the South East generally, is the provision of adequate supplies of water. An examination of the water supply situation in South East England is being made in parallel with this planning study.

Summary of the water situation

2. The broad conclusion on water is that, given the necessary expenditure on schemes to develop sources of supply, and given statutory powers to undertake the works where these are required, there is no overriding obstacle to the provision of enough water to meet the needs of the population of the Study area, which will have grown to well over 21 million by 1981.

3. But it takes time to plan and execute a major water scheme, and in some areas where new towns and town expansions are proposed, and where heavy natural increase of the population

is likely, the present sources of supply are strained. In some water catchment areas too, different big expansions are competing for the same water supplies. This will affect the timing of some schemes, and may mean that, at any rate over a given period, the pace of growth at one town may be influenced by the rate of development at another. It might indeed prove desirable to defer the start of some until water supplies have been improved.

4. These questions are, of course, inter-dependent on other factors which may govern

the target for expansion and the speed of development at any given place, and the availability of water will be one of the matters for detailed investigation at each place. But certain problem areas stand out.

5. Natural increase alone will produce problems in **South Essex** and would, in time, require expensive schemes to bring more water into the area. The further increases considered in the Study, both of commuters and in planned expansion schemes (e.g. Chelmsford, Colchester and Southend), will make the provision of more water an urgent matter. This might be done through a tunnel passing water from the Thames catchment to Essex. There is already one such tunnel—it cost £5 million to build—but it may not have sufficient capacity to meet all the demands expected in Essex by 1981.

6. The situation in **Kent** is similar. Here too there will be a large natural increase, and expansion at Ashford and Maidstone will make the problem more urgent. The solution might be the exploitation of the resources of the River Medway Basin, or perhaps ultimately another tunnel from the Thames.

7. The other area of difficulty is the **Great Ouse** and **Nene** water areas. Four expansion schemes

which might be among the largest (Bletchley, Northampton, Peterborough and Stansted) may have to look to these areas for their supplies. There may be enough water available locally, but expensive schemes might be required to obtain this. Expansion at Stansted, unless it were designed to drain northwards to the Great Ouse basin, might have unfortunate effects on existing water supplies from the River Lee.

8. The **Thames Basin** is likely to be the key to water supply in the region. On present population estimates it should be able to meet all demands made on it up to 1981. Thereafter, it may be that the flow in the Thames will have to be augmented by bringing water from other catchments to the west. This would be a direct result of the total population increase in the region, and not of the particular distribution of that population suggested in the Study.

9. The size and urgency of the problems in the South East are such that a preliminary investigation of the possibilities of various major regional water schemes should be set on foot at once. This could be one of the first problems to which the Water Resources Board (to be established under the Water Resources Act 1963) will wish to turn its attention.

The water supply study

10. The area included in the water supply study is not quite the same as that of the planning study, for physical and hydrological reasons. Northamptonshire and the Soke of Peterborough are included, and Dorset is omitted. Otherwise the boundaries are generally co-terminous.

11. The area is bounded on the landward side by the Northampton Uplands, the Cotswolds, the Berkshire Downs, the Hampshire Downs, Salisbury Plain and Cranborne Chase, and on the seaward side by the North Sea, the Strait of Dover and the English Channel. Apart from the

low coastal belts in the Fens and in Hampshire, the relatively high ridge boundary is interrupted by the Thames Valley in the Vale of White Horse and in the Kennet Valley.

12. The principal river systems are those of the Nene, the Great Ouse and the Thames; and there are some relatively small river systems discharging to the sea around the coastline.

13. The sedimentary geological formations in the area range from the Lower Lias of the Jurassic to the Norwich Crag of the Pleistocene measures. The principal measures of importance

to underground water supplies are the Chalk and Lower Greensand and the Oolitic Limestones. Many useful supplies are also obtained from other pervious formations, although in much smaller quantities.

14. At the end of 1963 there were 130 water undertakings in the area, of which 81 were local

authorities, 19 water boards and 30 water companies. This number will continue to be reduced by amalgamations and regroupings. There are 10 river or catchment boards in the area who will, in due course, be superseded by nine river authorities to be established under the Water Resources Act 1963.

Present conditions

15. The basis for ascertaining present conditions was the information contained in returns for 1961 made to the Ministry of Housing and Local Government by statutory water undertakings.

16. In that year, the population in the area which was directly supplied was about 18 million. This population was supplied with 909 million gallons per day, of which 615 were unmetered (domestic), and 294 metered (trade, etc.). This total figure is equivalent to 50.3 gallons per head per day.

17. The area is supplied with water from surface sources and from underground sources in the Chalk, Lower Greensand, the Oolites and lesser supplies from other pervious strata. In 1961, of the total of 909 million gallons per day supplied, 433 were from underground sources and 470

from surface supplies, the balance being accounted for by bulk supplies. Of 470 million gallons per day obtained from surface supplies, 306 million gallons per day were obtained by the Metropolitan Water Board from their intakes in the rivers Thames and Lee. The next largest surface water supply was 34 million gallons daily from the River Stour for the South Essex Waterworks Company.

18. Surface supplies generally are either by direct abstraction of raw water from the river or by pumped storage. Upland impounded supplies are rare in the South East, the only example of note being the impounding reservoirs in the Nene catchment of the Mid-Northamptonshire Water Board.

Future conditions

19. It is estimated in the planning study that the population of South East England will increase by 3½ million by 1981, of which 1½ million would be accommodated in new and expanded towns.

20. In the water supply study consideration has to be given to the water demands for the whole increase in population of 3½ million, in addition to the increasing demands of the present population. The provision made for planned expan-

sions of 1½ million is only a part of the whole problem.

21. The demand for water per head of population is showing a tendency to increase considerably because of the introduction of domestic appliances such as washing machines, the provision of waterborne sanitation and fixed baths in more private houses, the general raising of standards of personal hygiene, the more general

use of inexpensive hoses and sprayers for garden watering and the development of spray irrigation for agricultural purposes. A statistical examination of trends in the past, as far as comprehensive records are available, shows that, if present trends continue, the demand per head per day in England and Wales as a whole, including both domestic and trade supplies, may by 1981 have increased from the present 50.4 gallons per head per day to at least 65 gallons per head per day.

Availability of water

23. The area has been divided into eight units, which correspond approximately to the hydro-metric areas used by the Surface Water Survey Unit of the Ministry of Housing and Local Government. In some cases those areas have been grouped together.

24. It must be emphasised that the schemes outlined below are merely suggestions put forward as a possible means of meeting the demand, and their final adoption must depend upon the results of considerable exploratory work, the consideration of other interests (such as agricultural use of land, riparian interests and the interests of other water users), and the obtaining of the necessary powers to enable them to be carried out. The Minister of Housing and Local Government is in no way committed to any of the schemes.

25. Until it is known with more certainty whether particular planned expansion schemes will go forward, it is not possible to go into the water schemes in any detail, and the pattern and timing of the rate of building development will influence their phasing. Up to ten years may elapse between the first inception of a scheme involving major works and the time when it first produces water in useful quantities.

26. EAST ANGLIA. In this area there is a surplus of underground water in the Chalk and

This figure does not include industrial and other supplies drawn from privately-owned sources.

22. On the basis of these figures and the expected population increase, the 1961 consumption of 909 million gallons daily will rise by 1981 to 1,372 million gallons daily; as the reliable yields of existing headworks and sources are little more than adequate to meet present demands, further developments will be necessary to produce the additional 463 million gallons daily.

some supplies can be made available by utilising surface water from reservoirs of the pumped storage type. The balance of surface and ground water should be integrated to make the best use of each.

27. The construction of a barrage at Great Yarmouth to exclude sea water from the Rivers Bure and Yare could produce a considerable quantity of water but it would interfere with other interests and, at this stage, it can be considered as no more than a possibility.

28. NENE AND GREAT OUSE. It is doubtful if there would be sufficient ground water reserves to meet any large additional demands in the Nene catchment area, but surface water might be exploited in limited quantities by the use of pumped storage such as may be available in the disused clay pits in the Peterborough area.

29. The surface water resources of the Great Ouse Basin are already being exploited and works are now in progress for the construction of a pumped storage reservoir at Diddington and trunk mains for distribution. This first phase should be producing water by 1967 and later phases are timed to be completed before 1990. A later phase of the Great Ouse scheme, which cannot, however, be started for some years to come, and for which powers have not yet been

obtained, would include an intake at Kempston, near Bedford, and would use pumped storage in disused clay pits near Bedford.

30. Surface water resources might be augmented by using some smaller and less economical sites for reservoirs, but these proposals would probably fully develop the available surface water resources of the Great Ouse Valley. With the accelerated building development proposed in the Great Ouse Valley and in the areas served by the Great Ouse scheme which are dependent upon it for water supplies, it is probable that the development of the Great Ouse Water Supply scheme to its ultimate capacity will have to be accelerated considerably.

31. There are large reserves of water in the Chalk on the eastern side of the Great Ouse Basin. This Chalk is in a belt extending from an area east of King's Lynn to the neighbourhood of Cambridge. The resources of this Chalk belt have not been fully explored as a whole and the ability of the Chalk to yield up its stored water has not been fully proved. It is, however, regarded as a potential source of future supplies, some of which may well be available for export to other areas such as the Lee Basin and north Essex.

32. ESSEX. In the planning study several large and important developments are suggested in Essex, an area in which the unexploited resources of both ground and surface water are extremely limited. It will be necessary to import water from other areas to meet the large demands for major expansions and development in Essex.

33. For supplies in north Essex, additional water could be drawn from Suffolk and East Anglia, and from the Chalk in the Great Ouse Basin. The Metropolitan Water Board have completed the Thames-Lee Tunnel main which is to convey untreated Thames water from Hampton to the Lee Valley in east London and an arrangement already exists for supplying a considerable quantity of this water into south Essex. To increase this supply the discharge capacity of the Thames-Lee Tunnel could be augmented and ultimately it may be necessary to duplicate the tunnel. There is a potential site for a reservoir for

storage of Thames water on the Cobbins Brook in the Lee Basin, which could be used for supplies to south Essex.

34. THE LEE BASIN. This is a critical area, as it contains the new towns of Harlow and Stevenage and places in Hertfordshire which would be affected by the spread of commuter population from London.

35. No major additional abstraction of ground water can be relied upon in the future and the surface water resources are already more than fully exploited. Therefore, to meet the large development expected in this area, water will have to be imported from outside the basin. This could be done by importation of ground and surface water from the Great Ouse Basin and by water from the Thames catchment.

36. KENT. There are certain ground water reserves in east Kent and with proper regulation of the flows in the rivers, particularly the Medway, the local resources may be able to meet the expected demands for some years to come. However, if the developments in mid and south Kent envisaged in the planning study materialise, it is unlikely that local water resources will prove to be adequate. In the long term, the supplies in north Kent could be augmented by Thames water, possibly conveyed into the area by a tunnel like the Thames-Lee Tunnel.

37. THAMES. The Thames Basin is the most important unit in the system of water supplies for South East England. In addition to the many important supplies given within the basin, both of ground and surface water, most of which is returned to the River Thames in the form of sewage effluents, the river forms the lifeline of surface water supplies to the London area and, in the future, may well serve to augment local supplies in south Essex and north Kent.

38. In addition to natural increases in population in the basin, major planned developments may take place at Aylesbury, Banbury, Reading and Swindon, as well as a big new town in the Newbury area.

39. The water resources of the Thames Basin should be sufficient to support supplies to the future population within the upper basin, most of the water so used being returned to the river for re-use.

40. Water flowing in the Thames channel above Teddington Lock is abstracted during the wetter periods of the year and stored for use in the drier periods and by this method supplies are maintained throughout the year to the population needing them. This method is being extended by the Metropolitan Water Board by the construction of more storage reservoirs in the Thames Valley, and they have had under consideration the construction of more reservoirs in the Thames Basin. The possibility has also been considered of utilising the underground storage available in the Chalk and Oolites under the Thames Basin and augmenting the flow in the Thames channel in dry periods by pumping into it water from underground. By such means as these, the water available in the Thames catchment area could be utilised to the full.

41. There are further possibilities of augmenting the flow in the Thames which may well merit consideration, either as additional or as alternative measures. One is that water might be pumped northwards from the basins of the Rivers Avon and Stour in Hampshire to discharge into the Kennet. Another suggestion is that water might be pumped into the upper reaches of the Thames from further west.

42. It is, therefore, considered that the Thames, possibly augmented by importation of water from neighbouring catchment areas, should be capable of meeting the demands for the Thames Basin, London and the areas of south Essex and north Kent for many years to come.

43. Development of the potentialities of the Thames would entail major engineering work such as the construction of large storage reservoirs, the exploration and construction of numerous boreholes for the abstraction of ground water to augment the river flows, the possible duplication of the Thames-Lee tunnel

for conveying Thames water into south Essex and a similar tunnel for conveying water into north Kent.

44. SUSSEX. Where rivers are fed from chalk springs, the ground and surface waters are interdependent, and for optimum exploitation must be developed as one. There are reserves of ground water in the county especially in the chalk of the South Downs and surface water in the rivers is capable of development, if adequate storage can be provided.

45. There need be no great anxiety about water supplies in Sussex, if the exploitation of ground and surface resources is properly co-ordinated.

46. HAMPSHIRE. The principal planned expansion suggested in Hampshire is in the Southampton-Portsmouth area. The main sources of water supplies are the Chalk for ground water and direct abstractions from rivers. Southampton draws supplies from both, but Portsmouth relies mainly upon the Chalk. The rivers are mainly chalk-fed so that the ground and surface water cannot be treated independently; large scale exploitation of the ground water may affect the flow in the rivers. The effect of this on fishing, particularly in the Itchen and the Test, will need to be considered.

47. It is probable that large scale exploitation of the water reserves would be from the rivers. This would entail providing adequate storage to regulate the flow, when suitable sites can be found. In general, storage sites as far downstream as possible and near to the tidal waters would probably be least open to objection from the point of view of riparian interests.

48. Poole, in Dorset, is included in the towns proposed for development. This area depends at present upon ground water for its supplies and there is a limited reserve of water which could be exploited. If this proves inadequate, consideration could be given to the development of river supplies in the neighbourhood, provided that suitable storage sites could be found.

Capital investment

49. At the present stage of the development proposals for South East England it is very difficult to estimate what would be the total capital cost of water supply. This is largely due to unavoidably incomplete knowledge of the final location of the future centres of population and the phasing of the major schemes which will be necessary.

50. Approximate broad and comprehensive figures are suggested, based upon major works which have been or are being carried out in the post-war period, and adjusted to give some indication of present-day costs. These include

headworks and treatment works for major schemes and what is thought to be a reasonable allowance for trunk mains for conveying water from sources to the points from which it would be distributed. No allowance is made in these figures for distribution systems within the towns.

51. On this basis, the cost of major water supply schemes for an additional population of $3\frac{1}{2}$ million would be of the order of £65 million. This figure can only be taken as a broad indication of the order of the capital cost involved. No indication of the probable phasing of expenditure can be attempted at present.

Conclusion

52. To provide for the expected increase in population in South East England over the next 20 years it will be necessary to develop a number of major new water supply schemes. This will call for careful co-ordination on a much larger scale than has been necessary in the past, not only to provide for the delivery of additional water into areas with inadequate local resources, but to ensure that available resources are exploited to the best advantage and that the phasing of the programme of exploitation is geared to the pattern of increasing demand for water.

53. In the next decade, water undertakings will be faced with increasing demands for water both from the increase in demand *per capita* and from increasing population and industry. They will undoubtedly have to develop fully their existing sources of supply and seek to exploit many local potential sources. At the same time and in parallel with this, the authorities responsible for water conservation and the allocation

of available water resources will need to consider the major schemes, such as those involving the transference of water between the various river basins. In addition to this, exploratory and preparatory work should be carried out as soon as possible to prove the practicability of certain of the major schemes which will become necessary in the not very distant future.

54. As a general guide, it is suggested that the following steps might be taken:

- (i) A more detailed investigation of the suitability of sites for storage of surface water in East Anglia than was possible by the Surface Water Survey.
- (ii) Consideration of the possibility of accelerating the present programme of the Great Ouse Water Authority and the possibility of developing the Kempston Intake and the Stewartby storage scheme at an earlier date than was expected.

(iii) The field exploration of the potentialities of the Chalk in the Great Ouse Basin, by the appropriate authority.

(iv) The immediate acceleration of all projects for full development of all the available resources in Essex. This should include the possibility of augmenting the present arrangement for the supply of Thames water into south Essex and the possible need for additional storage for this purpose.

(v) The immediate acceleration of a more detailed field exploration of the available sites for regulating and pumped storage reservoirs in Kent, especially on the Medway, any necessary further exploration of the Chalk reserves, and the elimination of saline contamination in the mining areas.

(vi) Proposals for seeking additional storage sites

in the Thames Valley and for exploring the possibilities of exploiting the underground storage in the Thames Basin should be encouraged.

(vii) The possibilities of further connections between the Thames and Lee basins and of such a connection between the Thames catchment area and the area of the Kent river board should be considered.

(viii) Transfers of water into the Thames catchment area from the west and south should be the subject of preliminary investigation.

(ix) A start should be made on detailed exploratory work for exploiting the ground and surface water resources of Hampshire, in particular the field exploration of sites for regulating or pumped storage reservoir sites for surface water.

Tables

THIS Appendix brings together some of the detailed material on which the argument in the text is based. Most of the tables are related to the figures illustrating the text. They are divided into three main sections. The first section contains the definitions of the major divisions of England and Wales and the subdivisions of South East England used in the Study; the second deals with population; and the third with employment.

Definition of areas

2. For the purposes of the Study, England and Wales has been divided into five major areas; and South East England has been further subdivided. These tables give the composition, and the estimated civilian populations, of each of these divisions in 1961.

3. **Table 1** gives the composition of the major divisions of England and Wales used in the Study (see Fig. 2). These divisions are, in general, made up of the ten standard regions defined

by the Registrar General for the 1961 Census. The only exception is in the case of Dorset, the whole of which is included in the South East as defined in the Study. (For comparison with the regional boundaries used by other government departments, see footnotes 1 and 2.)

4. **Table 2** shows the subdivisions of South East England used in the Study, and Tables 3, 4, 5 and 6 give the composition of them (see Fig. 3).

5. The main subdivisions of the South East are

the metropolitan region, which is the area within about 40 miles of the centre of London, where the influence of London is most strongly felt; and, within the metropolitan region, the Greater London conurbation, as defined for the 1961 Census, which comprises the built-up area lying inside the metropolitan green belt.

6. **Table 3** gives the composition of the conurbation.

Population statistics

7. **POPULATION DISTRIBUTION AND CHANGES.** The chief source of population statistics is the Census, which has been held every 10 years (with the exception of 1941) since 1801. The Registrar General's published estimates of *home population*, based on the Census, include, however, members of the British, Commonwealth, and foreign armed forces in the area, and it is more appropriate for the purposes of land use planning to use his specially prepared mid-year estimates of *civilian population*.

8. **Table 7** shows the distribution of population in 1951 and 1961 and the changes occurring between these dates, principally by natural change and migration. These changes are illustrated in Figs. 4, 5 and 6.

9. **Table 8** shows the growth of the population of South East England since 1801, and how the area's percentage share of the total population of England and Wales has varied.

10. **Table 9** deals with changes in population distribution within the metropolitan region. It shows how, in a cross-section of the region from Reading to Southend, the balance of population has shifted both within the conurbation and between the conurbation and the outer metropolitan region over the period 1901-61 (see Fig. 15).

11. **THE BIRTH RATE.** **Table 10** gives the number of live births recorded in each year from 1946 to 1962 in England and Wales as a

whole and in the subdivisions of South East England. For each area, the post-war low is shown in heavy type. The table also gives the figures for each area on a ratio basis related to 1955, which was the low point for the birth rate trend in England and Wales as a whole. These changes in trend are illustrated in Fig. 12, and the birth rate trend for England and Wales as a whole over the period is shown in Fig. 7.

12. **EXISTING PLANNED OVERSPILL SCHEMES.** **Tables 11 and 12** deal with the provision already made under the New Towns Act 1946 and the Town Development Act 1952 for the housing of overspill population from local authority areas in London which have been recognised as exporting areas for the purposes of Section 9 of the Housing Subsidies Act 1956. The major schemes are shown in Fig. 14.

13. One purpose of these two tables is to show the capacity remaining unused in existing schemes in 1961, as a basis for calculating the further provision needed (Chapter 10, paragraph 19). For this purpose, schemes which have been agreed since 1961 are relevant and capacity to be provided in them has been shown as existing in 1961, which is the base date for the relevant calculation.

14. **Table 13** compares the age structure of the population of the London new towns in 1961 with that of England and Wales as a whole (see Fig. 24).

Employment statistics

15. **AREAS.** The geographical divisions of England and Wales and of South East England used in the Study (Tables 1-6) are made up of local authority areas. Some boundaries of Ministry of Labour local office areas (which are the basic units for employment data) do not correspond with those of local authority areas, and the divisions in the tables relating to employment therefore differ slightly from the divisions used in the population tables.

16. Two of the major divisions, Midlands and Northern England, were affected by changes in Ministry of Labour regional boundaries made in 1962 when three regions (Midland, North Midlands, and East and West Ridings) were combined to form two new regions (Midlands, and Yorkshire and Lancashire). The figures used here are for the regions as constituted up to 1962.

17. For most of the tables the figures for South East and South West England have been adjusted so as to include in the South East the part of Dorset (i.e. the whole of the county except Poole) which falls in Ministry of Labour South Western Region. In Tables 16, 19, 20, 21 and 23, however, South East England does not include the whole of Dorset.

18. **SCOPE OF THE STATISTICS.** The employment statistics are derived from the Ministry of Labour's annual (June) estimates of employees (employed and unemployed). For Great Britain as a whole these estimates account for 92 per cent of the total working population (i.e. people of working age who either work for pay or gain or who register themselves as available for such work). The balance is made up of employers and people working on their own account (6 per cent) and members of Her Majesty's Forces and Women's Services (2 per cent).

19. **INDUSTRIAL CLASSIFICATION.** In some tables the total number of employees is analysed

by groups to provide a picture of the structure of employment.

20. The Standard Industrial Classification, issued by the Central Statistical Office in 1958, groups industries in 24 Orders. The classification is based on industries and not on occupations, and administrative, technical, clerical and ancillary staff are included in the figures of employment for the industry concerned. Thus the head office of a firm operating in the United Kingdom is classified as far as possible according to the major activity of the firm.

21. The Industrial Orders are further subdivided into Minimum List Headings; the particular industries included under each heading are set out in the Standard Industrial Classification. In most of the tables dealing with employment structure the analysis is in terms of either Orders or Minimum List Headings, but for some general tables the Orders have been grouped, for the purpose of the Study, into three broad categories—primary, manufacturing, and service industries. The composition of these categories is shown in Table 16.

22. **PERIODS COVERED.** Detailed employment statistics cannot be produced on a comparable basis for the period taken for population statistics, 1951-61. A broad regional analysis of changes in the distribution of employees for the period 1952-62 has been specially prepared by the Ministry of Labour and is given in Table 14. In general, however, comparable employment statistics are not available for years earlier than 1955 because the figures before that date are not corrected for 'bulk exchanges' i.e. to allow for the fact that some large firms may exchange the national insurance cards of some of their employees in a region other than that in which they work. Regional analysis of employment on a comparable basis is, therefore, possible only for the period 1955-62.

23. Changes in classification were introduced when the Standard Industrial Classification was revised in 1958; for this reason, most of the tables analysing employment structure cover the period 1959-62 only. In Table 18 figures for the three broad categories have been compiled for an earlier period, 1955-58, on the basis of the 1948 edition of the Standard Industrial Classification. These figures, however, are not fully comparable with those given for 1959-62.

24. NUMBER AND DISTRIBUTION OF EMPLOYEES.

Table 14 shows the distribution of employees, by major divisions of England and Wales, in 1952 and 1962, and the changes that took place between these dates. These figures for a 10-year period have been specially prepared by the Ministry of Labour; figures are not available for the subdivisions of South East England used in the Study.

25. Table 15 is a similar analysis for the period 1955-62. Comparable figures of total employees are available over this period, and figures are given for the subdivisions of South East England (see Fig. 8).

26. EMPLOYMENT STRUCTURE. Table 16 lists the 24 Industrial Orders in the three broad categories used in the Study and shows how the structure of employment in South East England in 1962 differed from the structure for England and Wales as a whole. The table also indicates the changes in the numbers in employment in each Industrial Order in Great Britain over the period 1952-62. These figures have been specially provided by the Ministry of Labour; no breakdown for the subdivisions of South East England is available in terms of Industrial Orders.

27. Table 17 is an analysis of employment structure in 1962 in terms of the three broad categories only, but with a breakdown for the subdivisions of South East England. The differences in structure are illustrated in Fig. 10.

28. Table 18 illustrates the differential changes that have taken place in the distribution of employment in the three broad categories in each of the divisions and subdivisions of the country.

The analysis covers two three-year periods 1955-58 and 1959-62. No estimates of change are available for the year 1958-59 during which changes in classification were introduced.

29. Table 19 is based on an analysis of the changes in the numbers employed in each of the 24 Industrial Orders in Great Britain as a whole over the period 1952-62. It shows how employees in Orders with differing rates of employment growth or decline were distributed between the major divisions of England and Wales in 1962. Table 20 is based on a similar analysis, relating only to manufacturing industries, and in terms of Minimum List Headings, not Industrial Orders. For this more detailed analysis the standard of comparison has to be the relatively short period, 1959-62, and not the ten-year period used in Table 19 (see Fig. 9).

30. Table 21 sets out the industries (in terms of Minimum List Headings) which have had employment increases of over 3,000 in South East England in the period 1959-62. Table 22 contains a similar analysis for the London conurbation only.

31. FACTORY AND OFFICE BUILDING. Table 23 gives figures of industrial buildings completed in the years 1952-61 (inclusive), and the estimated employment provided, in each of the major divisions of England and Wales and of South East England (see Fig. 11).

32. These figures are based on information available to the Board of Trade as a result of applications for industrial development certificates. They relate to completed buildings known to the Board of Trade by 30th June 1963. The estimates of employment provided are those accepted when the applications were decided. They relate only to labour requirements which could be attributed to the proposed building or extension itself.

33. The table also relates the estimated employment provided in each area to its total insured population in 1952; no figures are available for the subdivisions of South East England, except for the London conurbation.

34. Table 24 illustrates the growth in office floor

space in central London (see Fig. 17). The estimates of office floor space have been provided by the London County Council; they relate to buildings for which the principal use is offices,

for the purposes of the Town and Country Planning (Use Classes) Order 1963 (S.I. 1963 No. 708). The table also includes the Council's estimates of further commitments.

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- Table 10. Live births: England and Wales and South East England 1946-62

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EMPLOYMENT STATISTICS

Number and distribution of employees

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EMPLOYMENT STATISTICS *continued**Employment structure*

- Table 16. Employment structure by Industrial Orders: England and Wales and South East England 1962
- Table 17. Employment structure by broad categories: England and Wales and South East England 1962
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- Table 19. Employment structure (all industries), analysed by reference to national employment changes 1952-62: England and Wales 1962
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- Table 21. Industries with increases in employment of 3,000 or more: South East England 1959-62
- Table 22. Industries with increases in employment of 3,000 or more: London conurbation 1959-62

Factory and office building

- Table 23. Industrial development: England and Wales and South East England 1952-61
- Table 24. Office growth in central London since 1939

NOTE. *Figures have been rounded to the nearest final digit and, in some tables, there may be a slight discrepancy between the sum of the constituent items and the total as shown.*

Major divisions of England and Wales

TABLE 1

<i>Composition of major divisions and standard regions of England and Wales</i>	<i>1961 civilian population (thousands)</i>	<i>Composition of major divisions and standard regions of England and Wales</i>	<i>1961 civilian population (thousands)</i>
(1)	(2)	(1)	(2)
All areas	45,852	Midlands continued	
South East England	17,747	Northamptonshire	398
London and South Eastern Region	11,034	Nottinghamshire	502
Essex (part)	1,003	Peterborough, Soke of	74
Hertfordshire (part)	154	Rutland	23
Kent	1,689	South West England	3,132
London	3,173	South Western Region (part)	3,132
Middlesex	2,222	Cornwall	330
Surry	1,722	Devon	801
Sussex, East	662	Gloucestershire	998
Sussex, West	409	Somerset	595
Eastern Region	3,711	Wiltshire	408
Bedfordshire	380	Northern England	13,969
Cumbria/Geshire	188	Northern Region	3,239
Isle of Ely	89	Cumberland	291
Essex (part)	1,276	Durham	1,519
Hertfordshire (part)	682	Northumberland	816
Huntingdonshire	77	Westmorland	67
Norfolk	553	Yorkshire, North Riding	546
Suffolk, East	340	East and West Ridings	4,166
Suffolk, West	127	Yorkshire, East Riding	523
Southern Region	2,783	Yorkshire, West Riding	3,643
Berkshire	502	North Western Region	6,564
Buckinghamshire	485	Cheshire	1,369
Devon (part)	90	Derbyshire (part) (see Note 3)	69
Hampshire	1,308	Lancashire	5,127
Oxfordshire	306	Wales	2,621
Isle of Wight	92	Wales	2,621
South Western Region (part)	219	Anglesey	50
Dorset (part)	219	Breconshire	54
Midlands	8,384	Carmarvonshire	120
Midland Region	4,759	Cardiganshire	53
Hercfordshire	128	Carmarthenshire	167
Shropshire	293	Denbighshire	172
Staffordshire	1,737	Flintshire	148
Warwickshire	2,028	Glanogeg	1,223
Worcestershire	573	Merionethshire	37
North Midland Region	3,625	Moromouthshire	442
Derbyshire (part) (see Note 3)	812	Montgomeryshire	46
Leicestershire	682	Pembrokeshire	92
Lincolnshire: Parts of Holland	103	Radnorshire	18
Parts of Kesteven	132		
Parts of Lindsey	495		

NOTES

1. South East England as defined in the table corresponds with two Board of Trade regions (London and South Eastern, and Eastern), together with that part of Dorset, i.e. the whole Administrative County except Poole M.B., which is within Board of Trade South Western Region.

2. Apart from some areas where Ministry of Labour administrative boundaries do not coincide with those of local authority areas, South East England is the equivalent of two Ministry of Labour Regions (London and South Eastern, and Eastern and Southern), together with the local office areas in South Western Region which serve Dorset.

3. The area of Derbyshire falling within Northern England (North Western Region portion) comprises Rother M.B., Glossop M.B., New Mills U.D., Walsley Bridge U.D. and Chapel en le Frith R.D.

Subdivisions of South East England

TABLE 2

Area	1961 civilian population (thousands)
(1)	(2)
South East England	17,747
Metropolitan region	12,402
London conurbation (see Table 3)	8,132
Outer metropolitan region	4,269
Inner country ring (see Table 4)	2,317
Outer country ring (see Table 5)	1,932
Rest of South East England (see Table 6)	5,345

London conurbation

TABLE 3

Constituent areas	1961 civilian population (thousands)	Constituent areas	1961 civilian population (thousands)
(1)	(2)	(1)	(2)
All areas	8,132.4	Kent (part)	593.8
London	3,172.6	Beckenham M.B.	76.6
Middlesex	2,232.4	Bexley M.B.	89.6
Essex (part)	1,603.1	Bromley M.B.	68.2
East Ham C.B.	105.4	Chislehurst and Sidcup U.D.	87.1
West Ham C.B.	156.6	Crayford U.D.	31.3
Barking M.B.	72.2	Erlin M.B.	45.0
Chigwell U.D.	61.5	Orpington U.D.	79.8
Chingford M.B.	45.9	Penge U.D.	25.8
Dagenham M.B.	109.0	Surrey (part)	1,077.0
Ilford M.B.	177.6	Croydon C.B.	252.3
Leyton M.B.	93.3	Banstead U.D.	41.0
Waltham Holy Cross U.D.	11.7	Barnes M.B.	39.0
Walthamstow M.B.	108.8	Beddington and Wallington M.B.	32.6
Wanstead and Woodford M.B.	61.2	Cershallon U.D.	56.5
Hertfordshire (part)	153.8	Coulston and Purley U.D.	73.8
Barnet U.D.	27.3	Epsom and Ewell M.B.	69.9
Bathery U.D.	21.4	Esler U.D.	60.5
Chesham U.D.	35.5	Kingston-upon-Thames M.B.	36.0
East Barnet U.D.	40.6	Malden and Coombe M.B.	46.3
Elstree R.D.	29.1	Merton and Morden U.D.	67.6
		Mitcham M.B.	63.7
		Richmond M.B.	40.7
		Surbiton M.B.	62.5
		Sutton and Chess M.B.	77.9
		Wimbledon M.B.	57.0

Inner country ring

TABLE 4

Constituent areas	1961 civilian population (thousands)	Constituent areas	1961 civilian population (thousands)
(1)	(2)	(1)	(2)
All areas	2,317.2	Hertfordshire continued	
Berkshire (part)	86.0	Welwyn Garden City U.D.	35.3
New Windsor M.B.	25.6	Hatfield R.D.	40.0
Easthamstead R.D.	43.8	Hemel Hempstead R.D.	13.2
Windsor R.D.	15.6	Hertford R.D.	10.1
		St. Albans R.D.	38.3
		Ware R.D.	12.3
		Watford R.D.	58.2
		Welwyn R.D.	7.0
 Buckinghamshire (part)	234.2		
Beaconsfield U.D.	9.8	Kent (part)	238.3
Chesham U.D.	16.5	Dartford M.B.	45.5
Eton U.D.	5.4	Gravesend M.B.	50.7
Slough M.B.	80.7	Northfleet U.D.	22.4
Amersham R.D.	55.4	Sevenoaks U.D.	17.5
Eton R.D.	66.3	Swanscombe U.D.	8.9
		Dartford R.D.	53.3
		Sevenoaks R.D.	40.0
Essex (part)	614.2		
Basildon U.D.	89.7	Surrey (part)	553.7
Brentwood U.D.	49.6	Caterham and Warlingham U.D.	34.0
Canvey Island U.D.	15.7	Chertsey U.D.	41.0
Epping U.D.	9.8	Dorking U.D.	22.4
Harlow U.D.	54.3	Egham U.D.	30.8
Hornchurch U.D.	130.7	Frimley and Camberley U.D.	27.4
Romford M.B.	114.7	Guildford M.B.	53.5
Thurrock U.D.	113.4	Leatherhead U.D.	36.2
Epping and Ongar R.D.	36.3	Reigate M.B.	54.3
		Walton and Weybridge U.D.	45.4
		Woking U.D.	67.7
		Bagshot R.D.	16.2
		Dorking and Horley R.D.	31.5
		Godstone R.D.	40.0
		Guildford R.D.	53.5
Hertfordshire (part)	536.9		
Chorleywood U.D.	7.0	Sussex, West (part)	53.9
Harpden U.D.	18.4	Crawley U.D.	53.9
Hemel Hempstead M.B.	55.7		
Hertford M.B.	16.0		
Hoddesdon U.D.	18.0		
Rickmansworth U.D.	28.8		
St. Albans M.B.	30.1		
Stevage U.D.	43.6		
Ware U.D.	10.0		
Watford M.B.	75.0		

Outer country ring

TABLE 5

<i>Constituent areas</i>	<i>1961 civilian population (thousands)</i>	<i>Constituent areas</i>	<i>1961 civilian population (thousands)</i>
(1)	(2)	(1)	(2)
All areas	1,952.0	Hertfordshire continued	
Bedfordshire (part)	206.4	Bishop's Stortford U.D.	19.0
Dunstable M.B.	25.7	Hitchin U.D.	23.8
Leighton Buzzard U.D.	11.7	Leotoworth U.D.	25.8
Luton M.B.	132.0	Royston U.D.	6.1
Luton R.D.	37.0	Sawbridgeworth U.D.	4.7
Berkshire (part)	261.3	Tring U.D.	6.0
Reading C.B.	120.4	Berkhamsted R.D.	6.3
Maidenhead M.B.	35.3	Braughing R.D.	10.1
Wokingham M.B.	11.5	Hitchin R.D.	23.0
Bradfield R.D.	28.3	Kent (part)	413.6
Cookham R.D.	16.6	Chatham M.B.	48.0
Wokingham R.D.	49.2	Gillingham M.B.	71.0
Buckinghamshire (part)	197.0	Maidstone M.B.	59.4
Aylesbury M.B.	27.0	Rocheater M.B.	50.2
Bletchley U.D.	16.9	Royal Tunbridge Wells M.B.	39.7
High Wycombe M.B.	50.2	Southborough U.D.	9.7
Linslade U.D.	4.1	Tonbridge U.D.	22.3
Marlow U.D.	8.7	Midstone R.D.	20.0
Aylesbury R.D.	30.5	Malling R.D.	40.0
Wing R.D.	8.9	Strood R.D.	28.8
Wycombe R.D.	50.6	Tunbridge R.D.	24.6
Essex (part)	343.7	Oxfordshire (part)	31.5
Southend-on-Sea C.B.	163.7	Henley M.B.	9.0
Berflet U.D.	32.6	Henley R.D.	22.5
Chelmsford M.B.	49.9	Surrey (part)	91.4
Rayleigh U.D.	19.1	Farnham U.D.	27.0
Chelmsford R.D.	47.7	Godalming M.B.	16.4
Roehford R.D.	30.7	Haslemere U.D.	12.7
Hampshire (part)	93.1	Hambledon R.D.	35.3
Aldershot M.B.	27.9	Sussex, East (part)	123.7
Farnborough U.D.	29.0	Burgess Hill U.D.	14.1
Fleet U.D.	13.0	Cuckfield U.D.	20.1
Hartley Wintsey R.D.	23.2	East Grinstead U.D.	15.5
Hertfordshire (part)	145.0	Cuckfield R.D.	30.5
Baldock U.D.	6.7	Uckfield R.D.	43.5
Berkhamsted U.D.	13.5	Sussex, West (part)	45.3
		Horsham U.D.	21.3
		Horsham R.D.	24.0

Rest of South East England

TABLE 6

Constituent areas	1961 civilian population (thousands)	Constituent areas	1961 civilian population (thousands)
(1)	(2)	(1)	(2)
All areas	8,345.1	The parts of the following geographical counties that are not within the Metropolitan Region:	
The whole of the following geographical counties:		Bedfordshire (part)	173.5
Cambridgeshire	137.7	Berkshire (part)	154.8
Dorset	308.9	Buckinghamshire (part)	53.5
Isle of Ely	81.7	Essex (part)	318.3
Huntingdonshire	76.7	Hampshire (part)	1,214.4
Norfolk	552.6	Kent (part)	533.8
Suffolk, East	340.1	Oxfordshire (part)	274.5
Suffolk, West	126.9	Sussex, East (part)	539.3
Isle of Wight	92.5	Sussex, West (part)	310.1

TABLE 7
 Civilian population changes
 England and Wales and South East England 1951-61
 (thousands)

Area	Distribution 1951		Changes 1951-61						Distribution 1961		
	No.	Per cent	Total		By births and deaths		Estimated net balance by migration		No.	Per cent	
			No.	Per cent	No.	Per cent	No.	Per cent			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
England and Wales	43,269	100.0	2,583	6.0	1,975	4.6	321	287	0.7	45,852	100.0
South East England	16,480	38.1	1,267	7.7	730	4.4	124	413	2.5	17,747	38.7
Metropolitan region	11,603	26.8	796	6.9	373	5.0	87	134	1.2	12,402	27.0
Midlands	7,732	17.9	632	8.4	465	6.0	58	129	1.7	8,384	18.3
South West England	2,947	6.8	185	6.3	99	3.4	22	64	2.2	3,132	6.8
Northern England	13,541	31.3	427	3.2	597	4.4	98	-268	-2.0	13,959	30.5
Wales	2,569	5.9	52	2.0	84	3.3	19	-51	-2.0	2,621	5.7
South East England	16,480	100.0	1,267	7.7	730	4.4	124	413	2.5	17,747	100.0
London conurbation	8,321	50.5	-189	-3.3	334	4.0	60	-583	-7.0	8,132	45.8
Outer metropolitan region	3,284	19.9	985	30.0	241	7.3	27	717	21.8	4,269	24.1
Inner country ring	1,658	10.0	659	39.7	156	9.4	14	499	29.5	2,317	13.7
Outer country ring	1,626	9.9	326	20.0	83	5.2	13	228	14.0	1,952	11.0
Rest of South East England	4,875	29.6	471	9.6	155	3.2	37	279	5.7	5,345	30.1

NOTES

1. The estimates are for civilian population only and allowance has, therefore, to be made for reduction in the size of the armed forces over the period. In the absence of information on the destinations of demobilised personnel, the net gain to the civilian population of the country as a whole from this source has been allocated to areas (column 8) *pro rata* to their 1951 populations.

2. The estimates of net migration (column 9) have been calculated by deducting from the total change (column 4) the estimates of natural change (column 6) and the allowances made for gains from the armed forces (column 5).

**The proportion of the population of England and Wales
resident in South East England 1801-1961**

TABLE 8

Year	Population of South East England			
	Enumerated		Census	
(1)	No. (Abstract)	Percentage of the population of England and Wales	No. (Abstract)	Percentage of the population of England and Wales
	(2)	(3)	(4)	(5)
1801	3,214	38.6		
1811	3,669	38.5		
1831	4,321	38.4		
1831	4,954	37.8		
1841	5,579	37.2		
1851	6,307	35.2		
1861	7,047	35.1		
1871	8,031	35.4		
1881	9,157	35.3		
1891	10,409	35.9		
1901	11,786	36.2		
1911	13,276	36.8		
1921	13,663	36.1		
1931	14,897	37.3		
1941	No Census			
1951	16,653	38.1	16,480	38.1
1961	17,868	38.8	17,747	38.7

NOTE

The figures given in column 2 are the census enumerated populations. In column 4 the Registrar General's mid-year estimates for 1951 and 1961 are given for comparison; equivalent estimates are not available for earlier years.

TABLE 9
Population changes in a cross-section of the metropolitan region
1901-1931-1961
(thousands)

Area	Census enumerated populations						Population changes					
	1901		1931		1961		1901-31		1931-61		1901-61	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
All areas	4,029.5	100.0	4,662.0	100.0	4,504.3	100.0	632.6	16	157.7	3	474.9	12
Outer metropolitan region (west)	177.9	4.4	257.6	5.5	442.0	9.8	79.7	45	184.5	72	264.2	149
Outer country ring	129.0	3.2	172.0	3.8	263.3	5.8	43.1	33	91.2	53	134.3	104
Inner country ring	48.9	1.2	85.6	3.7	178.8	4.0	36.6	75	93.2	109	129.9	266
Conurbation	3,751.7	93.1	4,126.1	88.5	3,432.1	76.2	374.4	10	694.0	17	319.6	9
Suburbs (west)	118.3	2.9	316.7	6.8	567.4	12.6	198.4	168	250.7	79	449.1	380
Inner urban (west)	1,158.8	28.8	1,275.7	27.4	1,072.7	23.8	117.0	10	203.0	16	86.1	7
Central area	504.1	12.5	347.0	7.4	216.4	4.8	157.2	31	132.5	38	289.7	58
Inner urban (east)	1,900.2	47.2	1,923.1	41.3	1,229.7	27.3	22.9	1	693.4	36	670.5	35
Suburbs (east)	70.3	1.7	263.6	5.7	347.8	7.7	193.3	275	84.3	32	277.5	395
Outer metropolitan region (east)	99.9	2.5	278.3	6.0	630.2	14.0	178.5	179	351.8	126	530.3	431
Inner country ring	69.0	1.7	126.4	2.7	383.4	8.5	77.3	158	257.0	203	334.3	382
Outer country ring	50.9	1.3	152.0	3.3	246.8	5.5	101.1	199	94.8	62	196.0	385

NOTES

1. The figures used are the census enumerated populations and not the civilian populations. The enumerated populations in the 1901 and 1931 Censuses have been adjusted to relate to the local authority areas as constituted in 1961.

2. The cross-section has been defined in terms of local authority areas and its width varies from 5 to 10 miles. The local authorities included are:

Outer metropolitan region (west)	Reading C.B., Maidenhead M.B., Wokingham M.B., Reading R.D., Cookham R.D., Wokingham R.D.
Inner country ring	New Windsor M.B., Slough M.B., Farnham R.D., Eton R.D., Eton M.B.
Suburbs (west)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.
Inner urban (west)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.
Inner urban (east)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.
Outer country ring (west)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.
Suburbs (east)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.
Inner country ring (east)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.
Outer metropolitan region (east)	Reading C.B., Maidenhead M.B., Wokingham M.B., Wokingham R.D., Wokingham R.D.

Live births

England and Wales and South East England 1946-62

TABLE 10

(thousands)

Year	England and Wales		South East England				Rate of South East England			
	No.	Index (1955=100)	Total		London conurbation		Outer metropolitan region			
			No.	Index (1955=100)	No.	Index (1955=100)	No.	Index (1955=100)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1946	820.7	123	307.9	126	159.7	139	58.8	105	89.4	120
1947	851.0	132	326.2	133	168.1	147	63.1	112	95.0	128
1948	775.3	116	281.0	115	143.1	124	55.4	99	83.6	113
1949	730.5	109	263.0	107	131.9	115	51.1	95	78.9	106
1950	697.1	104	250.5	102	124.0	108	49.2	88	76.9	104
1951	677.5	101	245.2	100	120.4	105	50.5	90	74.5	100
1952	673.7	101	243.6	99	118.3	103	51.3	91	74.0	100
1953	684.4	102	246.7	101	117.9	103	52.9	94	75.9	102
1954	673.7	101	246.8	101	116.6	102	54.5	97	75.7	102
1955	667.8	100	245.0	100	114.7	100	56.1	100	74.2	100
1956	700.3	105	256.6	105	119.2	104	60.4	108	77.1	104
1957	723.4	108	265.3	108	121.0	105	64.4	115	79.9	108
1958	740.7	111	273.0	112	125.0	109	69.1	123	80.8	109
1959	748.5	112	279.8	114	126.5	110	71.7	128	81.6	110
1960	785.0	118	295.2	120	135.2	116	75.8	135	86.1	116
1961	811.5	122	306.1	125	138.2	120	80.0	143	87.8	118
1962	838.7	126	318.4	130	143.3	125	83.6	149	91.4	123

NOTES

1. The table gives the number of live births occurring during each calendar year as recorded in the Registrar General's annual *Statistical Review*, Part II.
2. The figures in heavy type are the post-war low points for each area.

Reception capacity in existing new towns
mid-1961

TABLE 11

New town	Year of designation	Population at designation	Increase by planned growth in development stage	Population proposed for end of development stage	Estimated population mid-1961	Capacity remaining in mid-1961
(1)	(2)	(3)	(4)	(5)	(6)	(7)
All London new towns	—	99,000	382,000	481,000	337,000	114,000
Crawley	1947	10,000	44,000	54,000	54,000	—
Hemel Hempstead	1947	21,000	42,000	63,000	55,000	8,000
Basildon	1949	25,000	61,000	86,000	54,000	32,000
Brockwell	1949	5,000	45,000	50,000	21,000	29,000
Harlow	1947	4,500	66,500	71,000	54,000	17,000
Hatfield	1948	8,500	16,500	25,000	21,000	4,000
Stevenage	1946	7,000	51,000	60,000	48,000	17,000
Welwyn Garden City	1948	18,000	24,000	42,000	35,000	7,000

NOTES

- This table relates only to the planned population growth in the development stage of the new towns, during which they are administered by development corporations. In the second stage of the development of the existing new towns there will be no further planned inward movements from London although the population will continue to grow, mainly by natural increase. Crawley and Hemel Hempstead have now reached this stage and the assets of the development corporations were transferred to the Commission for the New Towns on 1st April 1962.
- The Brockwell designated area has been extended since mid-1961 thus enabling the population at which planned growth is expected to cease (column 5) to be raised from 40,000 to 50,000. The figure in column 7 therefore represents the difference between 50,000 and the estimated population at mid-1961.

Reception capacity in agreed town development schemes
mid-1961

TABLE 12

Receiving area (1)	Additional population as agreed (2)	Population received under planned schemes by mid-1961 (3)	Capacity remaining in mid-1961 (4)
All London schemes	216,700	39,000	186,700
Outer metropolitan region	41,000	12,300	28,700
Aylesbury	10,500	900	9,600
Bletchley	16,500	4,300	6,200
Carrey Island	1,400	800	600
Princes and Canbury	4,800	1,400	2,300
Houghton Keys (Luton R.D.)	4,900	3,400	1,500
Letchworth	6,100	600	5,500
Luton	3,500	900	2,600
Rest of South East England	142,400	1,700	140,700
Andover	21,000	—	21,000
Asford (Kerf)	14,900	100	14,800
Basbury	7,000	—	7,000
Basingstoke	40,300	100	40,200
Bury St. Edmund's	5,200	—	5,200
Haverhill	5,000	700	4,300
Huntingdon	3,500	100	3,400
*King's Lynn	12,300	—	12,300
*Mildenhall	7,000	—	7,000
St. Neots	3,500	—	3,500
*Sudbury and Cornard	7,000	—	7,000
Thetford	5,200	700	4,500
*Witham	10,300	—	10,300
Elsewhere	33,300	16,000	17,300
*Grantham	1,800	—	1,800
Swindon	21,000	16,000	5,000
*Wellingborough	10,500	—	10,500

NOTE

The schemes marked with an asterisk have been agreed since mid-1961; the whole of the planned increase in population is included in the calculation of capacity available within the period of the Study (column 4).

TABLE 13

Age structure
London new towns and England and Wales 1961

(thousands)

Age group (1)	Total population			
	London new towns		England and Wales	
	No. (2)	Per cent (3)	No. (4)	Per cent (5)
All ages	335.5	100.0	45,852	100.0
0-4	42.6	12.7	3,665	8.0
5-9	37.5	11.2	3,254	7.1
10-14	30.5	9.1	3,667	8.0
15-19	18.9	5.6	3,150	6.9
20-24	17.8	5.3	2,752	6.0
25-29	28.2	8.4	2,797	6.1
30-34	33.5	10.0	2,939	6.4
35-39	32.0	9.5	3,196	7.0
40-44	23.9	7.1	3,053	6.7
45-49	19.2	5.7	3,225	7.0
50-54	14.2	4.2	3,206	7.0
55-59	10.8	3.2	2,962	6.5
60-64	8.2	2.5	2,465	5.4
65-69	6.7	2.0	1,986	4.4
70-74	5.3	1.6	1,540	3.4
75-79	3.5	1.0	1,087	2.4
80-84	1.8	0.6	601	1.3
85 and over	0.9	0.3	297	0.6

NOTES

1. The eight London new towns are listed in Table 11.
2. The age structure of their population (column 2) is based on the 1961 Census enumerated population. The figures for England and Wales (column 4) are the Registrar General's estimates for the civilian population as at 30th June 1961.

Changes in the distribution of employees
England and Wales 1952-62

TABLE 14

(thousands)

Area	Distribution 1952		Change 1952-62		Distribution 1962	
	No.	Per cent	No.	Per cent	No.	Per cent
	(1)	(2)	(3)	(4)	(5)	(7)
England and Wales	18,684	100.0	1,933	10.3	20,617	100.0
South East England	7,262	38.9	1,083	14.9	8,345	40.5
Midlands	3,415	18.4	426	12.4	3,861	18.7
South West England	1,072	5.7	143	13.3	1,215	5.9
Northern England	5,981	32.0	240	4.0	6,221	30.2
Wales	934	5.0	41	4.4	975	4.7

TABLE 15

Changes in the distribution of employees
England and Wales and South East England 1955-62

Area	Distribution 1955		Change 1955-62		Distribution 1962	
	No.	Per cent	No.	Per cent	No.	Per cent
	(1)	(2)	(3)	(4)	(5)	(6)
England and Wales	19,307	100.0	1,310	6.8	20,617	100.0
South East England	7,579	39.3	766	10.1	8,345	40.5
Metropolitan region	5,784	30.0	571	9.9	6,356	30.8
Midlands	3,595	18.6	266	7.4	3,861	18.7
South West England	1,113	5.7	102	9.1	1,215	5.9
Northern England	6,074	31.5	147	2.4	6,221	30.2
Wales	946	4.9	29	3.1	975	4.7
South East England	7,579	100.0	766	10.1	8,345	100.0
London conurbation	4,464	58.6	203	6.6	4,737	56.8
Outer metropolitan region	1,340	17.7	278	20.8	1,619	19.4
Inner country ring	677	8.9	168	24.7	845	10.1
Outer country ring	663	8.8	111	16.7	774	9.3
Rest of South East England	1,795	23.7	195	10.9	1,990	23.8

NOTE

The estimates for subdivisions of South East England, except the London conurbation, incorporate adjustments to cover employees (such as established civil servants not holding national insurance cards) who are excluded from the Ministry of Labour statistics for areas smaller than complete regions and the London conurbation. They are, therefore, less precise than the other estimates.

Employment structure by Industrial Orders England and Wales and South East England 1962 TABLE 16

No.	Industrial Order	Title	Distribution of employees 1962		Changes in numbers of employees in employment in Great Britain 1952-62 Per cent	
			South East England			England and Wales
			No. (thousands)	Per cent		
(1)		(2)	(3)	(4)	(5)	(6)
		All industries	8,273.3	100.0	100.0	18
		Primary industries	222.8	2.7	5.4	— 25
I		Agriculture, Forestry, Fishing	204.0	2.5	2.3	— 19
II		Mining and Quarrying	18.9	0.2	3.1	
		Manufacturing industries	2,770.1	33.6	39.2	
VI		Engineering and Electrical Goods	992.4	12.0	12.3	20
IX		Metal Goods not elsewhere specified	322.3	3.9	2.7	23
XV		Paper, Printing and Publishing	290.6	3.5	4.1	14
VIII		Vehicles	274.5	3.3	3.5	13
III		Food, Drink and Tobacco	188.4	2.3	2.6	— 1
XII		Clothing and Footwear	173.6	2.1	2.4	10
IV		Chemicals and Allied Industries	135.3	1.6	1.5	2
XIV		Timber, Furniture, etc.	124.4	1.5	1.4	25
XVI		Other Manufacturing Industries	91.6	1.1	1.6	3
XIII		Bricks, Pottery, Glass, Cement, etc.	55.9	0.7	2.7	12
V		Metal Manufacture	53.8	0.7	0.9	— 16
VII		Shipbuilding and Marine Engineering	42.9	0.5	3.4	— 13
X		Textiles	22.5	0.3	0.8	— 8
XI		Leather, Leather Goods and Fur	5,280.4	63.8	55.4	
XX		Service industries	1,156.8	14.0	12.7	25
XXIII		Distributive Trades	966.8	11.9	9.3	5
XXII		Miscellaneous Services	848.7	10.3	9.4	96
XIX		Professional and Scientific Services	674.8	8.2	7.2	— 4
XVII		Transport and Communication	572.5	6.9	6.7	16
XXIV		Construction	566.3	6.7	5.8	2
XXI		Public Administration and Defence	335.9	4.1	2.6	31
XXI		Insurance, Banking and Finance	148.6	1.8	1.7	4
XVIII		Gas, Electricity and Water				

NOTES

1. In this table South East England comprises Ministry of Labour London and South Eastern and Southern Regions, and does not include Devon.
 2. The order of the industrial orders is the same as in the 1966 edition of the Statistical Yearbook of Great Britain. Within each broad category, the Orders are listed in descending order of the size of their labour force in the South East.
 3. Some employees who cannot be industrially classified are excluded from these estimates.

TABLE 17
 Employment structure by broad categories
 England and Wales and South East England 1962

Area	Estimated numbers of employees					
	Primary industries		Manufacturing industries		Service industries (including construction)	
	No.	Per cent	No.	Per cent	No.	Per cent
(1)	(2)	(3)	(4)	(5)	(6)	(7)
England and Wales	1,115	5.4	8,080	39.2	11,421	55.4
South East England	232	2.8	2,782	33.3	5,331	63.9
Metropolitan region	72	1.1	2,258	32.6	4,016	63.3
Midlands	275	7.1	1,913	49.6	1,673	43.3
South West England	73	6.0	381	31.4	760	63.6
Northern England	408	6.6	2,702	43.4	3,111	50.0
Wales	127	13.0	302	31.0	596	56.0
South East England	232	2.8	2,782	33.3	5,331	63.9
London conurbation	18	0.4	1,588	33.5	3,131	66.1
Outer metropolitan region	55	3.4	670	41.7	884	54.9
Lower country ring	22	2.6	374	44.6	443	52.8
Outer country ring	33	4.2	286	36.5	441	57.3
Rest of South East England	139	8.0	325	26.2	1,315	63.8

NOTES

1. For the Industrial Orders included in each of the three broad categories see Table 16.
2. The estimates for subdivisions of South East England, except the London conurbation, incorporate adjustments to cover employees (such as established civil servants not holding national insurance cards) who are excluded from the Ministry of Labour statistics for areas smaller than regions and the London conurbation. They are, therefore, less precise than the other estimates.
3. Some employees who cannot be industrially classified are excluded from these estimates.

Changes in numbers of employees in primary, manufacturing and service industries
England and Wales and South East England 1955-58 and 1959-62

TABLE 18

Area	All industries						Primary industries						Manufacturing industries						Service industries (including Construction)					
	1955-58		1959-62		1955-58		1959-62		1955-58		1959-62		1955-58		1959-62		1955-58		1959-62					
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)				
England and Wales	369.0	1.9	892.0	4.5	54.6	4.0	172.7	13.4	78.0	0.9	384.9	5.0	349.3	3.5	685.0	6.4								
South East England	236.5	3.1	677.5	6.1	16.0	5.5	31.8	12.1	89.5	3.2	173.3	6.6	162.5	3.5	338.0	6.8								
Metropolitan region	198.7	3.4	347.0	5.8	5.8	6.3	10.6	12.2	61.6	2.7	118.8	5.6	143.5	4.2	240.9	6.4								
Midlands	42.0	1.2	215.6	5.9	8.0	2.4	41.8	13.2	14.0	0.7	134.0	7.5	63.8	4.6	123.9	8.0								
South West England	20.5	1.8	39.5	5.1	6.6	7.7	8.4	10.3	11.7	3.1	20.6	5.7	15.2	2.4	47.8	6.7								
Northern England	64.0	1.1	115.4	1.9	14.2	2.9	68.5	14.6	7.7	0.3	39.5	1.5	85.0	3.2	144.2	4.9								
Wales	6.0	0.5	24.0	2.5	9.5	5.8	24.2	16.1	1.5	0.5	17.5	6.1	16.8	3.6	31.1	6.0								
South East England	236.5	3.1	477.5	6.1	16.0	5.6	31.8	12.1	89.5	3.2	173.3	6.6	162.5	3.6	338.0	6.8								
London conurbation	84.0	1.9	190.0	4.2	0.4	1.9	0.8	4.3	11.5	0.7	13.4	2.1	95.8	3.6	158.0	5.3								
Outer metropolitan region	114.7	8.6	157.0	10.7	5.4	7.7	9.2	14.4	75.0	13.2	85.4	14.6	47.8	5.9	82.9	10.3								
Inner country ring	59.1	8.7	99.1	13.3	3.1	17.3	3.4	13.5	49.5	14.3	58.3	18.5	20.4	5.7	46.4	11.7								
Outer country ring	53.5	8.4	57.9	6.1	2.1	5.1	5.6	15.1	32.2	12.2	27.1	19.1	27.4	6.0	36.5	9.0								
Rest of South East England ¹	37.8	2.1	130.6	7.0	10.2	5.5	21.8	12.0	27.9	5.6	54.5	11.6	18.9	1.7	97.1	8.0								

NOTES

1. For the Industrial Orders included in each of the three broad categories see Table 16.

2. The estimates for subdivisions of South East England, except the London conurbation, incorporate adjustments to cover employees (such as established civil servants not holding national insurance cards) who are excluded from the Ministry of Labour statistics for areas smaller than regions and the London conurbation. They are, therefore, less precise than the other estimates.

3. The estimates for all industries, columns 2 and 4, include some employees who cannot be industrially classified and who are accordingly excluded from the numbers recorded under primary, manufacturing and service industries.

Employment structure (all industries) analysed by reference to national employment changes 1952-62

England and Wales 1962

Each of the Industrial Orders in the Standard Industrial Classification has been placed in one of three groups according to the changes in the numbers employed in the industries in each Order in Great Britain as a whole over the period 1952-62. The percentage changes in employment in each of the Industrial Orders for the period are given in Table 16 (column 6). The table shows the distribution of employees in each of these groups of industries in 1962. The three groups are defined as follows:

Group I. Employment increase of 20 per cent and over

Group II. Employment increase of 0 to 19 per cent

Group III. Decline in employment

(thousands)

Area	Distribution of employees								
	All industries		Group I industries		Group II industries		Group III industries		Per cent (9)
	No. (2)	Per cent (1)	No. (4)	Per cent (5)	No. (6)	Per cent (7)	No. (8)		
England and Wales	20,615.2	100.0	8,471.8	100.0	8,699.8	100.0	4,892.6	100.0	
South East England	8,275.3	40.1	3,780.5	44.6	3,285.6	40.8	1,207.2	29.5	
Midlands	3,460.5	18.7	1,557.5	18.4	1,552.2	19.3	790.9	18.5	
South West England	1,285.8	6.2	485.1	5.7	559.8	7.0	240.9	5.9	
Northern England	6,220.9	30.2	2,335.0	27.5	2,240.5	27.8	1,647.4	40.3	
Wales	574.9	4.7	315.8	3.7	412.7	5.1	246.3	6.0	

NOTES

1. In this table South East England comprises Ministry of Labour London and South Eastern and Eastern and Southern regions, and does not include Dorset.

2. Changes in the numbers employed over the period June 1952 to June 1962 have been estimated by the Ministry of Labour for Industrial Orders as defined in the 1958 edition of the Standard Industrial Classification. They cover all persons aged 15 and over, in employment, excluding employers and persons working on their own account. They include employees temporarily laid off and persons unable to work on account of sickness.

3. Some employees who cannot be industrially classified are excluded from these estimates.

Employment structure (manufacturing industries) analysed by reference to national employment changes 1959-62

TABLE 20

England and Wales 1962

Each manufacturing industry defined by a Minimum List Heading in the Standard Industrial Classification has been placed in one of five groups according to the changes in the numbers employed in that industry in Great Britain as a whole over the period 1959-62. The table shows the distribution of employees in each of these groups of manufacturing industries in 1962. The five groups are defined as follows:

- Group I. Employment increase of 20 per cent and over
- Group II. Employment increase of 10 to 19 per cent
- Group III. Employment increase of 0 to 9 per cent
- Group IV. Decline in employment 0 to 9 per cent
- Group V. Decline in employment of 10 per cent and over

(Thousands)

Area	Distribution of employees											
	All manufacturing industries		Group I industries		Group II industries		Group III industries		Group IV industries		Group V industries	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
England and Wales	8,079.9	100.0	458.4	100.0	1,843.5	100.0	5,688.3	100.0	1,324.6	100.0	564.5	100.0
South East England	2,770.1	34.3	305.0	54.7	789.2	40.6	1,880.0	32.0	371.5	28.0	124.3	22.0
Midlands	1,912.7	23.7	88.7	15.9	546.5	28.1	1,029.9	27.7	173.9	13.1	82.8	14.7
South West England	383.2	4.9	24.6	4.4	87.3	4.5	169.4	4.6	82.0	6.2	29.9	5.3
Northern England	2,791.6	33.4	126.6	22.7	669.2	24.1	1,145.0	31.0	653.3	49.3	308.6	54.7
Wales	302.4	3.7	13.1	2.3	52.3	2.7	176.1	4.7	43.9	3.3	19.0	3.4

NOTES
1. In this table South East England comprises Ministry of Labour London and South Eastern and Eastern and Southern regions, and does not include Dorset.

2. Changes in the numbers employed over the period end-June 1959 to mid-June 1962 have been derived from *Numbers employed in Great Britain: Industrial Analysis* published in the *Ministry of Labour Gazette*. They cover all persons, aged 15 and over, in employment, excluding employers and persons working on their own account. They include employees temporarily laid off and persons unable to work on account of sickness.

Industries with increases in employment of 3,000 or more
South East England 1959-62

Scale of employers growth (in South East England)	Manufacturing industry				Service industry			
	Minimum List Heading		Increase in numbers of employer (thousands)		Minimum List Heading		Increase in numbers of employees (thousands)	
	No.	Title	(4)	(5)	No.	Title	(8)	(9)
Over 20,000	364	Radio and other electronic appliance	29.9	20	820	Retail distribution.	62.3	9
	381	Motor vehicle manufacturing	21.3	14	893	Other miscellaneous services	43.9	27
					900	Construction	49.5	8
					872	Educational services	38.1	13
					860	Insurance, banking and finance	25.5	8
					874	Medical and dental services	23.3	8
10-20,000	351	Scientific, surgical and photo- graphic instruments, etc.	15.3	19	810	Wholesale distribution	19.5	8
	489	Other printing, publishing, bookbinding, engraving, etc.	13.7	11	906	Local government service	15.6	5
	399	Metal industries not elsewhere specified	12.2	16	707	Postal services and telecom- munications	13.8	10
	349	Other mechanical engineering not elsewhere specified	11.8	18	887	Motor repairs, distributors, garages and filling stations	11.4	8
3-10,000	496	Plastic moulding and fabricating	7.9	26	889	Hairstyling and manicure	8.7	25
	339	Other machinery	7.4	6	706	Air transport	8.1	24
	212	Bread and flour confectionery	6.8	18	879	Other professional and scientific services	7.0	7
	486	Printing, publishing of news- papers and periodicals	6.7	9	709	Miscellaneous transport services and storage	6.7	18
	469	Adhesive and building materials, etc., not elsewhere specified	6.6	18	602	Electricity	6.3	8
	272	Pharmaceutical and toilet preparations	6.6	17	873	Legal services	5.3	13
	341	Industrial plant and stockwork	5.1	17	832	Dealing in other industrial materials and machinery	5.0	10
	333	Engineers' small tools and gauges	4.9	35	704	Sea transport	4.4	6
	361	Electrical machinery	4.6	10	871	Accountancy services	4.2	13

TABLE 21. *continued*

Scale of employment growth (in South East England)	Manufacturing industry			Service industry				
	Minimum List Heading			Minimum List Heading				
	No.	Title	Per cent	No.	Title	Per cent		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3-10,000	445	Dresses, lingerie, infants' wear, etc.	4.1	8	901	National government service	4.2	2
	369	Other electrical goods	3.8	6	833	Boating	3.3	34
	214	Bacon curing, meat and fish products	3.7	29				
	491	Rubber	3.6	12				
	338	Office machinery	3.3	16				
	494	Toys, games and sports equipment	3.2	23				
	337	Mechanical handling equipment	3.1	24				
	474	Shoe and office fitting	3.0	23				

NOTE

In this table South East England comprises Ministry of Labour London and South Eastern and Eastern and Southern regions, and does not include Dorset.

Industries with increases in employment of 3,000 or more
 London conurbation 1959-62

Scale of employment growth (in the conurbation)	Manufacturing industry				Service industry			
	Minimum List Heading		Increase in numbers of employees (thousands)		Minimum List Heading		Increase in numbers of employees (thousands)	
	No.	Title	No.	Per cent	No.	Title	No.	Per cent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Over 20,000					899	Other miscellaneous services (see Note 2)	36.3	24
					828	Retail distribution	30.6	8
					500	Construction	26.5	10
10-20,000					860	Insurance, banking and finance	11.5	5
					810	Wholesale distribution	11.4	6
					874	Medical and dental services	11.0	7
3-10,000	364	Radio and other electronic apparatus	9.5	11	966	Local government services	8.3	5
	381	Motor vehicle manufacturing	8.5	13	707	Postal services and telecommunications	8.2	9
	483	Other printing, publishing, book-binding, engraving, etc.	7.0	8	872	Educational services	8.1	6
	351	Scientific, surgical and photographic instruments, etc.	6.5	11	706	Air transport	6.3	23
	399	Metal industries not elsewhere specified	4.7	9	709	Miscellaneous transport services and storage	4.3	14
	212	Bread and flour confectionery	4.5	19	602	Electricity	3.2	7
	485	Printing, publishing of newspapers and periodicals	4.4	7	871	Accountancy services	3.0	12
	341	Industrial plant and steelwork	3.5	14	704	Sea transport	3.0	6

NOTES

1. The figures in this table relate to the Ministry of Labour's Greater London area; this does not differ substantially from the conurbation.

2. Examples of 'other miscellaneous services' are services of Commonwealth and foreign governments and international organisations; trade associations and trade unions; business services; head offices of firms operating abroad; and head offices of firms which are concerned with more than one activity and which cannot, therefore, be classified in any other heading.

TABLE 23

**Industrial development
England and Wales and South East England 1952-61**

Area	Floor space completed (million sq. ft.)	Estimated employment provided (thousands)			Employment provided as a percentage of the total female population June 1952
		Total	Male	Female	
(1)	(2)	(3)	(4)	(5)	(6)
England and Wales	305.0	599.1	389.2	209.9	3.2
South East England	129.3	203.9	128.2	75.7	2.8
Metropolitan region	97.7	139.4	91.5	47.9	6.6
Midlands	91.2	109.8	66.9	42.9	3.2
South West England	21.6	38.0	24.9	13.1	3.4
Northern England	128.8	202.7	136.7	66.0	3.4
Wales	25.1	44.7	32.5	12.2	4.8
South East England	129.3	203.9	128.2	75.7	2.8
London conurbation	44.5	44.2	27.4	16.8	1.0
Oxley metropolitan region	51.2	95.2	64.1	31.1	n.s.
Rest of South East England	30.6	64.5	36.7	27.8	n.s.

NOTES

1. In this table South East England is defined in terms of Board of Trade (cols. 2-5) or Ministry of Labour (col. 6) regions, and does not include Dorset.
2. The statistics of industrial building relate only to those new buildings and extensions for which Board of Trade locational approval has had to be obtained. In respect of such schemes approved up to 31st March 1960, only those completed projects which involved more than 5,000 sq. ft. of floor space and which were for applicants engaged in the manufacturing industries have been included. All completed projects for which approvals were given since that date are included. In those cases the figures cover only those parts of buildings for which an Industrial Development Certificate, as provided for in the Local Employment Act 1960, was required.

TABLE 24

Office growth in central London since 1939

Item	Floor space (million sq. ft.)	
	Change	Total
	(1)	(2)
Pre-war offices 1939	.	87.0
War damage	.	- 9.5
Existing, mid-1948	.	77.5
Changes, 1948-mid-1962	.	37.3
New building	.	35.5
Change of use	.	10.0
Demolition	.	- 8.2
Existing, mid-1962	.	114.8
Future commitments	.	25.6
Approved but not yet completed (net)	.	14.0
Estimated further commitments	.	11.6
Total	.	140.4

NOTES

1. The total for approvals not yet completed is a net figure arrived at by deducting from the total floor space in all outstanding approvals the amount of floor space in existing offices which will be lost through demolitions. Permissions for sites which have subsequently been developed for other purposes are not included.

2. Central London comprises the Greater London Construction Centre as defined in the 1961 Census (see Fig. 16, page 37).

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Part One

THE PROBLEM



Fig. 2. Major divisions of England and Wales

These divisions are comprised of standard regions as defined for Census purposes with the exception of South East and South West England. South East England comprises standard regions 4, 5 and 6, together with the remainder of Dorset which is part of standard region 7 (see Appendix 2, Table 1)

THE SOUTH EAST STUDY

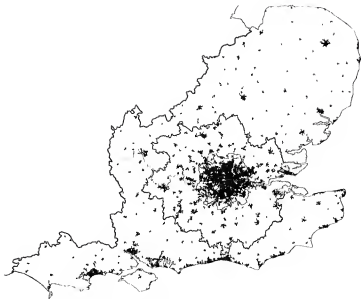


Fig. 1. The main built-up areas of South East England 1958

The map shows the extent of built-up areas in terms of bricks and mortar. Open uses on the periphery of towns (e.g. grounds of hospitals, institutions and large houses, and airfields) are not shown as built up; within towns, only the largest open spaces are shown.

The South East Study

1961-1981

Preface

THIS is the report of a study of the problems that may be expected to arise in South East England over the next twenty years, as a result of the big growth and movements of population that are likely to take place.

One of the main purposes of the Study is to provide a basis for discussion with local planning authorities on the provision that should be made, in one way or another, for this growth.

The Study was undertaken by the Ministry of Housing and Local Government, acting in close consultation with the other Government Departments concerned, including the Board of Trade, the Treasury, the Ministry of Transport, the Ministry of Labour and the Ministry of Agriculture, Fisheries and Food. Many of the local planning authorities in the South East have contributed information of great value, and useful help has been received from British Railways and London Transport.

The White Paper, *South East England*, which is being published at the same time, explains how far the Government feel able to adopt the analysis of the problem and the tentative proposals suggested in this report. This Study should be read in conjunction with the White Paper.

MINISTRY OF HOUSING AND LOCAL GOVERNMENT
WHITEHALL, LONDON SW1

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