

Appendix II: Collated Baseline Information

II INTRODUCTION

Baseline data has been presented in two formats: in summary text form and a more detailed baseline data table. Sources are shown in the second column and refer to the baseline documents used for the Local Development Framework Sustainability Appraisal/ Strategic Environmental Assessment.

- 2.1 Population
- 2.2 Human Health
- 2.3 Employment
- 2.4 Social Exclusion
- 2.5 Housing
- 2.6 Transport
- 2.7 Landscape & Townscape
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- 2.12 Climatic Factors
- 2.13 Soil & Minerals
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2.1 POPULATION

Summary

Dartford has experienced an 8% rise in population between 1991 and 2001 and a further 44% increase on the 2001 figure is expected by 2016 giving a population of around 124,000. Gravesham has experienced more modest growth with a 3.5% increase between 1991 and 2001 with a further 12% increase expected to 2016 taking the population to approximately 107,000. Both Dartford and Gravesham have an under 16 population which is marginally higher than the national average, but also trends indicate considerable growth in the over 65 age range in the period to 2021. Currently the area has a mean age slightly below the South East figure. Although there is a predominantly white population, figures for other ethnic groups are higher than the regional average.

Indicator	Source	Dartford	Gravesham	Comparators and Targets	Trend	Issues/Constraints/ Opportunities
Topic: Population						
Total number of people 2001 census	5	2001: 85,911	2001: 95,717	Kent 2001: 1,329,718	Dartford's population increased by 8% since 1991, higher than the 6% increase experienced by the South East.	Population increases will require an enhanced provision of services, and careful integration with existing communities. The increase in population will have impacts on all the sections covered in this baseline, both environmental and social.
	20	1991: 79,439	1991: 92,454	Thames Gateway Total (2001): 1,500,000		
	28			South East (2001): 8,000,645	Dartford population is predicted to rise to 124,000 by 2016, a 44% increase.	
	59			England (2001): 49,138,831	Gravesham population is predicted to rise at a more modest pace, to 107,000 by 2016 a 12% increase.	

Indicator	Source	Dartford	Gravesham	Comparators and Targets	Trend	Issues/Constraints/Opportunities
Total number of people 2005 Mid Year Estimates		87,400		Kent 2005: 1,369,900	There has been a 1.6% change in Dartford between 2001-2005.	
Under 16 years (%)		2001: 21.2	2001: 21.6	England and Wales 2001: 20.2	Both Dartford and Gravesham's population of under 16's is marginally higher than the national average by 1% and 1.4% respectively and this has increased since the 1991 census.	Educational facilities need to keep pace with the growth in the young population, both in the existing community and those expected to move to the area who may have young children.
16 to 19 years (%)		2001: 4.5	2001: 4.9	England and Wales 2001: 4.9	65 plus age group is expected to increase by 24.7% in Dartford, and 31.7% in Gravesham, by 2021, although LA's point out regeneration should attract a younger population (see doc 35).	
20 to 29 years (%)		2001: 13	2001: 11.3	England and Wales 2001: 12.6		
30 to 59 years (%)		2001: 42.1	2001: 41.8	England and Wales 2001: 41.5		
60 to 74 years (%)		2001: 12.7	2001: 13.7	England and Wales 2001: 13.3		The projected increase in the elderly population will require appropriate services and accommodation.
75 and over (%)		2001: 6.5	2001: 6.7	England and Wales 2001: 7.6		

Indicator	Source	Dartford	Gravesham	Comparators and Targets	Trend	Issues/Constraints/Opportunities
Mean Age of Population 2001 (years)	5	2001: 37.4	2001: 38.2	South East: 39.08 England: 38.60		
Ethnic groups (highest 3 percentiles)	5	White: 94.5 Mixed: 1.22 Asian or Asian Black: 2.67	White: 89.5 Indian: 7.2	South East White: 95.10% Asian or Asian British: 2.33% Mixed: 1.07% England White: 90.92% Asian or Asian British: 4.58% Black or Black British: 2.30% Mixed: 1.31%		Dartford and Gravesham both have slightly higher numbers of non-white residents than the regional or national averages. Meeting the cultural needs, both religious and secular, of these groups should be recognised in the planning process.
Religion (stated religion 2001) (%) (top three percentiles excluding religion not stated)	5	Christian: 73.3	Christian: 72.3	South East: Christian: 72.78	England: Christian: 71.74	
		No religion: 15.0	No religion: 12.02	No Religion: 16.50	No Religion: 14.59	
		Sikh: 1.1	Sikh: 6.7	Muslim: 1.36	Muslim: 3.10	

2.2 HUMAN HEALTH

Summary

The data below indicates that generally the population of both Dartford and Gravesham do not experience any significant health problems. All the statistics on perception of health, life expectancy and mortality rates compare favourably with both regional and national statistics.

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
Topic: Human Health							
Households with one or more person with a limiting long term illness (%) 2001	5	2001: 15.1	2001: 16.3	South East: 29.36	England: 33.55	Both areas are significantly below the regional and national average. Dartford sits 48% below the South East average and Gravesham 51% below the England average.	
General health (%) 2001	5			South East:	England:	The general health in Dartford statistically appears better than Gravesham but both are below the South East average with regards to good but fewer numbers are recorded as not good. Compared to both regional and national, Dartford and Gravesham have a larger percentage of	With predicted rising population numbers, the Local Authority need to ensure the appropriate levels of health care and leisure facilities are provided to maintain the current good state of health experienced by residents.
Good	70.4	69.4	71.50	68.76			
Fairly Good	22.3	22.8	21.38	22.21			
Not Good	7.4	7.8	7.12	9.03			

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
					people with fairly good health.	
Standardised Mortality Ratios (SMRs) (UK=100) 2001	5	111	98	South East: 92 England: 99	The higher mortality rate could be due to the higher age.	
Life expectancy 2001	5	(at birth) Males: 77.0 Females: 80.30	(at birth) Males: 76.80 Females: 81.00	South East (at birth): Males – 77.70 Females – 81.80 England (at birth): Males – 76.9 Females – 81.2	Life expectancy has steadily increased nationally with improved health care.	As discussed above, the ageing population will need appropriate facilities in terms of demands on health care and the provision of suitable housing, including sheltered housing schemes and residential and nursing care homes.

2.3 EMPLOYMENT

Summary

The local economy of Dartford and Gravesham is undergoing significant structural change. Between 1998 and 2004 employment in manufacturing in Dartford fell by 50% compared to a 138% increase in distribution, hotel and restaurant employment. Dartford and Gravesham now perform well in terms of the employed economically active; in 2001 the County figure was 62.2%, and the England and Wales figure 60.6%, compared with 66.1% and 62.1% in Dartford and Gravesham respectively. The figures for the economically active but unemployed also both perform favourably against the England and Wales statistic, although Gravesham (3.5%) had marginally higher unemployment in 2001 than the average for the County (2.8%). The area has considerable out commuting for employment; 37% of resident 16-74 year olds in Dartford work outside the area and 50% of resident 16-74 year olds in Gravesham work outside the area. Generally the pattern of employment by sector closely follows that of the region with considerable emphasis on the retail sector.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Economy and Employment						
Percentage Economically Active – Employed % (2001 as percentage of total population aged 16-74)	5	2001: 66.1	2001: 62.1	Kent 2001: 62.2% England and Wales 2001: 60.6%	Both areas show higher employment levels than the national average however Dartford town's unemployment rate of 3.8% was one of the highest unemployment rates for a medium-sized town in England. By 2006 this figure decreased to 2.2%, somewhat below the national average. The Boroughs percentage is	The trend appears to illustrate that the working population is responding to economic change but improvements in the skills base of the resident population will be needed to continue this trend and address the current high unemployment rate in Gravesham. Meeting the training needs of the long term unemployed will assist with this problem although in a
Percentage Economically Active – Unemployed % (2001 as percentage of		2001: 2.1	2001: 3.5	Kent 2001: 2.8% England 2001: 5.5%		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
total population aged 16-74)					less at 2.1%. Gravesham also had a very high unemployment rate reflecting structural shifts in the economy, which has also fallen steadily to 3.5% by 2001, which is still higher than neighbouring Dartford.	market economy there will always be a certain amount of short and long term unemployment.
Long-term Unemployed 2001		2001: 0.7	2001: 1.1	Kent 2001: 0.8% England and Wales 2001: 1.0%		
Student % (Economically Active) 2001		2001: 2.2	2001: 2.2	Kent 2001: 2.3 England and Wales 2001: 2.6	There is one student campus (North West Kent College) in Dartford and none in Gravesham. However nearby are the Universities of Kent and Greenwich with student populations totalling approximately 25,000.	Dartford and Gravesham have lower levels of students than the South East and England average and this may be an issue in retaining skilled labour in the Boroughs.
Student % (Economically Inactive) 2001		2001: 2.9	2001: 3.0	Kent 2001: 3.8 England and Wales 2001: 4.7		
Retired (Economically Active) 2001		2001: 13.2	2001: 14.2	Kent 2001:14.7% England and Wales 2001: 13.6%		

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
Commuting	60	38% of people in Dartford live and work in the Borough	47% of people in Gravesham live and work in the Borough			Gravesham has a significantly higher proportion of people out commuting and approximately 50% commute to London. Dartford also has significant numbers out commuting to work.	Matching skills with employment opportunities is a challenge for the development of the area. It is important to maintain a variety of employment opportunities and to up-skill the existing population through provision of training. Out-commuting is a major factor in air pollution, transport and climate change through use of the private vehicle. There are opportunities to increase employment in the town centre and mixed use development. (see mode of travel to work under Transport.)
Industry of employment 2001	5	Dartford	Gravesham	South East	England	The local economy of Dartford and Gravesham is undergoing significant structural change. Between 1998 and 2001 employment in manufacturing in Dartford fell by 50%	Given the projected development for the area, employment in the construction industry and real estate could be expected to rise. The Plan and Sustainability Appraisal need to
All persons		100% (42,255)	100% (43,961)	100% (3,888,756)	100% (22,441,498)		
Agriculture/Forestry (%)		0.8	1.1	1.4	1.5		
Fishing (%)							

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
		0	0.01	0.02	0.02	compared to the 138% increase in distribution, hotel and restaurant employment.	consider the changing nature of employment in the Boroughs.
Mining (%)		0.1	0.3	0.2	0.2		
Manufacturing (%)		13.2	13.6	12.1	14.8		
Electricity/Gas /Water Supply (%)		0.6	0.8	0.7	0.7		
Construction (%)		9.4	10.4	7.1	6.7		
Wholesale/ Retail Trade (%)		18.7	18.9	16.3	11.6		
Hotels/ Restaurant (%)		3.2	3.6	4.3	4.7		
Transport/ Comms (%)		8.6	8.2	8.1	7.1		
Financial (%)		6.7	5.6	5.1	5.8		
Real Estate (%)		11.8	11.4	15.6	13.2		
Public Admin (%)		5.5	5	6	6.6		
Education (%)							

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/ Opportunities
		6.4	7.2	7.8	8.7		
Health & Social Work (%)		10.1	8.3	9	10.6		
Other Community/ Social Activity (%)		4.5	4.7	4.5	5		
Self Employed (%)		0.03	0.05	0.2	0.1		
Extra Territorial Organisations (%)		0.01	0.01	0.03	0.05		
Other (%)		0.4	0.8	0.5	2.6		
Looking After Home/Family (%)	5	2001: 6.8	2001: 7.7	Kent 2001: 7.2% England and Wales 2001: 6.5%			
Permanently Sick or Disabled (%)	5	2001: 3.8	2001: 4.4	Kent 2001: 4.4% England and Wales 2001: 5.5%			
Other Inactive (%)	5	2001: 2.5	2001: 2.9	Kent 2001: 2.6% England and Wales 2001: 3.1%			

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Employment Land Supply 2004/2005:	64 66					
Local Plan Allocations		Net Allocated: 89.25 ha	Net Allocated: 190.13	Net Allocated: 759.64 ha		
Planning Permissions		Completed (Net completed 1991-2005) 2.11 ha Committed (Net committed) 349.15 ha	Completed (Net completed 1991-2005) 3.57 ha Committed (Net committed) 202.77 ha	Completed (Net completed 1991-2005) 358.26 ha Committed (Net committed) 1198.89 ha		
Existing Sites		Vacant plots without planning permission: 1.53 ha	Vacant plots without planning permission: 6.76 ha	Vacant plots without planning permission: 34.56 ha		
Total Land Supply		437.82 ha	403.23 ha	2351.35 ha		
Health Indicators 2006:	63					
Evening Economy (m²)		15,656	23,978	Kent: 251,538		Although there have been some new developments and improvements the town centre still faces a number of challenges in the future; to address the current relatively narrow range of shops, establish an evening economy and
Retail Floor space (m²)		1. Convenience Foods: 13,957 2. Convenience Non-Foods: 1,293 3. Comparison – Non bulky: 44,111 4. Comparison -	1. Convenience Foods: 21,676 2. Convenience Non-Foods: 1,186 3. Comparison – Non bulky: 42,218 4. Comparison -	Kent: 1. Convenience Foods: 130,415 2. Convenience Non-Foods: 24,523 3. Comparison – Non bulky: 631,112		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		bulky:26,446	bulky: 23,687	4. Comparison - bulky: 162,024		enhance it's economic performance.. <i>LDF</i> Policies will play a key role in ensuring the revitalisation and regeneration of Dartford town centre. Development should be in accordance with principles of Crime Prevention through Environmental Design. There are opportunities to improve community safety through encouraging activity, a mix of land uses, and ensuring appropriate natural surveillance.
Retail Vacancies (%)		16	14			
Footfalls (thousands)		25.99	31.59			
Retail Yields		7.75	7.75			
Retail Rents (£/m²)		484	538			
Employment		1830	2943	Kent: 32,459		
Crime 12 months reported incidents 2006		809	761			

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Transport (mode of travel %) 2005		Car: 83.3 Motorcycle: 1.32 Cycle: 0.71 Heavy Goods Vehicle/Light Goods Vehicle: 14.66	Car: 84.09 Motorcycle: 0.93 Cycle: 0.86 Heavy Goods Vehicle/Light Goods Vehicle: 14.12			

2.4 SOCIAL EXCLUSION

Summary

Education and improving the skills base is a key issue for the area. Although they compare reasonably with national figures, both Dartford and Gravesham have higher percentages of the population with no qualifications than the regional average and significantly lower numbers of those educated to degree level or above when compared both regionally and nationally.

The nearby borough of Medway has been used as a comparator for the Index of Multiple Deprivation. Dartford and Gravesham perform significantly better than Medway, particularly in the areas of income and employment deprivation, but Dartford does have five districts with an Index of Multiple Deprivation score above 30 – Littlebrook, Swanscombe, Joyce Green, Princes, and Stone based on 2005 data.

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/ Opportunities
Topic: Social Exclusion							
People aged 16-74 with:	5			South East	England	The South East has a relatively low percentage of people with no qualifications but both Dartford and Gravesham have higher figures than this regional average. Dartford sits just below the national average but Gravesham has a somewhat higher percentage of people with no qualifications. However both areas fall significantly behind	Education is a significant issue for the area combined with employment opportunities for those educated to degree level or higher.
No qualifications (%) 2001	5	2001: 28.2	2001: 31.4	23.92	28.85		
Qualification at Degree Level or Higher (all people 16-74) (%) 2001	5	2001:13.6	2001:12.5	17.13	16.63		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
					in terms of degree and post degree education.	
Qualifications to Either NVQ1/Equivalent, Level 3/4, or Trade Apprenticeship with No Formal Qualifications (%)	5 29	NVQ2 (2001) 14.7% NVQ3 (2001) 17.1%	NVQ2 (2001) 14.8% NVQ3 (2001) 10.2%	Kent NVQ2 (2001) 14.8% NVQ3 (2001) 14.2% South East NVQ2 (2001) 15.7% NVQ3 (2001) 14.4%	Gravesham NVQ3 percentage compares unfavourably to Dartford and comparators, and Kent figures lag behind South East figures.	Current skill levels in Thames Gateway are below-average for the Southeast. This needs improving if local people are to capitalise on new employment opportunities.
Spending per Pupil (Delegated budget (£000/pupil number))	29	2001/02: Primary: 1.84 Secondary: 2.77	2001/02: Primary: 1.75 Secondary: 2.67	2001/02: Primary Swale: 1.88 Medway: 2.08 Secondary	Whilst secondary education spending compare favourably with nearby authorities, there appears to be a slight deficiency in	Primary education is recognised as being an important stage of education and improvements could lead to higher educational

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
				Swale: 2.66 Medway: 2.77	primary school funding per pupil.	attainments in the long term.
Index of Multiple Deprivation IMD Average Score (= combination of ten indicators of deprivation , the higher the more deprived)	22 23	Dartford 2005 five districts with an Index of Multiple Deprivation score above 30 – Littlebrook, Swanscombe, Joyce Green, Princes, and Stone Average score = 17.98 Dartford average score 2000 = 18.83	Gravesham average score 2005 = 18.84 Gravesham average score 2000 =21.84	Dover average score = 19.55	Overall deprivation has dropped slightly in both boroughs since 2000, but deprivation levels are still high relative to many districts, although deprivation elsewhere in Kent is more severe (e.g. see Dover)	With projected increase in population, deprivation levels could increase through stress on facilities and services and increases in house prices.
Index of Multiple Deprivation MD Extent – (proportion of a district's population living in the most deprived Super Output Areas (Soa) of the country)	22	2001: 17.8%	2001: 18.07%	Medway 2001: 17.96%		
Index of	22	2001: 170	2001: 158	Medway 2001: 160		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Multiple Deprivation Extent Rank – (ranking of Index of Multiple Deprivation extent, on national scale. A rank of 1 is the most deprived, and 354 is the least deprived)						
Index of Multiple Deprivation Income Scale – (the number of people who are income deprived)	22	2001: 8,302	2001: 11,440	Medway 2001: 31,190		
Index of Multiple Deprivation Income Scale	22	2001: 234	2001: 174	Medway 2001: 66		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Rank – (see explanation of ranking above)						
Index of Multiple Deprivation Employment Scale – (number of people who are employment deprived)	22	2001: 3,439.50	2001: 4,682.25	Medway 2001: 11,865.25		
Index of Multiple Deprivation Employment Scale Rank	22	2001: 253	2001:196	Medway 2001: 74		

2.5 HOUSING

Summary

In accordance with the South East Plan Dartford and Gravesham will both experience high levels of housing development over the period 2006- 2026, 15,700 new dwellings in Dartford and 9,300 in Gravesham. If affordable housing is sought at a level of 30% of all new development, this should provide about 4,700 new homes for rent or shared equity in Dartford and 2,800 in Gravesham. Home ownership is roughly in line with national trends but Dartford, at 46.33%, has significantly higher than the national average of 38.88% of owner occupied homes with a mortgage. Figures for property rented from the Council is comparable to the national trend but nearly twice as high as the average for the south east, whilst property rented through an RSL (Registered Social Landlord) is under half that regionally or nationally. 2006 average house prices are below the County average but house price increases in Gravesham are in line with the national trend (8.6% last year) while Dartford is experiencing lower increases (3.4%).

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/ Opportunities
Topic: Housing							
All households: with residents 2001	5	35,240	38,266	South East 3,287,489	England 20,451,427	Dartford has a lower than average percentage of owner occupied outright houses but 7.5% more owner occupied with a mortgage than the national average. Shared ownership is in line with England. Rented housing from the council is also in line with England however the percentage of those	With the projected housing requirement for the area and national policy on the provision of affordable housing there is an opportunity to achieve significant levels of affordable housing for rent/ shared equity which will in some part address the issue of housing costs for those unable to purchase homes in the private market.
All households: with no residents 2001		752	815	91,301	676,196		
Owner occupied owns outright (%) 2001		27.27	30.33	31.28	29.19		
Owner occupied own mortgage /loan (%) 2001		46.33	40.82	41.90	38.88		

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
Owner occupied shared ownership (%) 2001		0.65	0.38	0.70	0.65	homes rented from a housing association is significantly lower. Gravesham has a higher percentage of owner occupied outright than Dartford and England but far less owner occupied with mortgage. Rented housing from the council features very highly in Gravesham whilst renting from housing associations and private landlords is lower than average.	
Rented from council (%) 2001		13.29	16.54	7.35	13.21		
Rented from housing association (%) 2001		3.02	2.23	6.61	6.05		
Rented from private landlord/ letting agency (%) 2001		7.41	6.87	8.77	8.80		
Rented other (%) 2001		2.03	2.82	3.31	3.22		
South East Plan Housing Allocations Net additional dwellings 2006 -2026	⁶	The South East plan seeks provision of 15,700 dwellings with annual build average of 785	The South East plan seeks provision of 9,300 dwellings with annual build average of 465	Medway The South East plan seeks provision of 16,300 dwellings with annual build average of 815 Swale The SE plan seeks provision of 8,300 dwellings with annual build average of 415		The figures illustrate high levels of development which is a feature of the whole south east of England. This provides opportunities for employment in the construction industry.	

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Provision of affordable housing		South East Plan indicative affordable housing target of 30% in the Kent Thames Gateway.				The housing requirement brings about potential for at least 4,700 affordable homes in Dartford and nearly 2,800 in Gravesham although higher targets could be sought as in other Districts and Boroughs.
Common Housing List 2007	61	Year: Number 2003: 1997 2004: 2582 2005: 2652 2006: 3728 2007: 3502 2008: 3532				
Number of People per Hectare	5	2001: 11.8	2001: 9.7	Kent 2001: 3.8 England and Wales 2001: 3.4	Both boroughs have significantly higher population densities than Kent as a whole and the England average. However due to the proximity of London and the inclusion of both boroughs in the commuter belt this is to be expected.	The densities are to be expected in urban areas and the challenge is to produce high density dwellings of good design.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Average Household Size		2001: 2.4	2001: 2.48	Kent 2001: 2.38 England and Wales 2001: 2.36	Average household size marginally higher than England and Wales.	
Average House Price: 2006	18	Average cost: £198,488 Detached: £348,336 Semi-detached: £216,936 Terraced: £185,802 Flat: £142,476 Change in last quarter: -1.5% Change in last year: 3.4%	Average cost: £198,342 Detached: £359,209 Semi-detached: £209,895 Terraced: £167,843 Flat: £144,321 Change in last quarter: 4.7% Change in last year: 8.6%	Kent Average cost: £225,098 Detached: £352,592 Semi-detached: £212,601 Terraced: £173,745 Flat: £147,115 Change in last quarter: 0.5% Change in last year: 8.5%		

2.6 TRANSPORT

Summary

Dartford and Gravesham have both experienced increased levels of car ownership and have higher than the regional or national average ownership of two vehicles.

In terms of mode of travel to work Dartford and Gravesham perform very differently. Dartford has very high levels of train use, over 17%, but very low levels of walking or cycling to work. Gravesham also has higher than average rail use, 11.03%, average walking to work but significantly high cycling to work at 11%. Both Dartford and Gravesham have significantly high travel to work by car figures. Dartford has a very significantly high level of people travelling 20-30 Km to work, 17.4% compared to a regional average of 5.3% and Gravesham has a significantly high level of those travelling 30-40 Km, 12% compared to 3.6%. Walking to school is national issue and in the absence of local data, national data has been provided.

Kent has experienced increases in heavy goods traffic-between 1980 and 1997; Heave Goods Vehicles (HGV) flows have increased by 66%, compared to the national average 49%, due to Kent's proximity to mainland Europe.

Completion of Channel Tunnel Rail Link (CTRL) in 2007 will increase the capacity of Ebbsfleet Station for both international and domestic passengers, and reduce journey times between Kent and London.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Transport						

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
All cars and vans in area 2001	5	43,348	45,606	England and Wales: 23,936,250		<p>The figures show a decrease in the numbers of households with no cars from 1991 – Dartford fell from 24.56 to 19.9% - highlighting the rapid rise in car use. Numbers of households with one car is higher in Dartford. The numbers of households with two cars is significantly higher in both Boroughs in comparison to the regional and national average and is suggestive of the high proportion of commuters.</p>	
Households with no cars or vans % (2001)	5	19.9	28.23	Kent: 26.73 South East: 19.43	England: 26.84		High levels of car ownership have implications for air quality and climate change. Improvements in public transport and traffic management e.g. congestion charging should reduce reliance on the private vehicle.
Households with one cars or vans % (2001)	5	46.1	42.8	South East: 42.62	43.69		

Indicator	Source	Dartford		Gravesham		Comparators and targets		Trend	Issues/Constraints/ Opportunities
Households with two cars or vans % (2001)	5	33.9		33.4		South East: 29.56	23.56		
Traffic Growth	8	Data Gap		Data Gap		Since 1980, traffic flows in Kent have increased at an average 4%, with HGV flows increased by 3% per annum.		Growth of both total traffic and HGV traffic has been consistently higher than the national average. Provision for the car remains an essential requirement in Kent, particularly in the rural areas which are not yet sufficiently served by other modes of transport.	
Mode of travel to work (%)	1 60	Dartford	Gravesham	South East	England	Travel to work by car has increased in both Dartford and Gravesham, and is above the average for England and Wales. Patronage of public transport is far below that of private cars although is higher than both Kent and Eng & Wales. In 1991, patronage of bus transport to work was less in Dartford & Gravesham than England and Wales (though more than in Kent generally). In 1991, use of rail in D&G exceeded that of Kent, and England and Wales. In 1991, fewer people in Dartford & Gravesham walked			The challenge for Dartford is to make walking or cycling to work an attractive proposition through the provision of safe walking and cycling routes and seeking cycle parking and changing facilities in new employment
Train									
Bus									
Car/Van									
Bike		17.14	11.03	5.63	4.23				
Foot		3.79	8.77	4.35	7.51				
		62.4	62.78	59.18	54.94				

Indicator	Source	Dartford		Gravesham		Comparators and targets		Trend	Issues/Constraints/ Opportunities
		1.09 1.34	11.01 9.02	3.07 9.91	2.83 9.99	to work than in Kent, England and Wales, with the fewest walkers in Dartford			development. The high level of train use illustrates the level of out commuting, a significant sustainability problem for both Boroughs.
Distance Travelled to work	5					South East	England	Trends are roughly in line with national statistics but two figures stand out – 17.4% of Dartford workers travelling 20 -30 Km against a regional average of 6.7% and 12% of Gravesham workers travelling 30-40Km compared to the regional average of 3.6%.	A wide range of employment opportunities should be provided for in Dartford and Gravesham to try to reduce commuting of such long distances for employment.
All persons		100% (42,255 persons)		100% (43,960 persons)		100% (3,888,756 persons)	100% (22,441,497 persons)		
Works mainly at home	5	7.2		8.2		9.9	9.1		
Less than 2km		17.1		16.3		20.3	19.9		
2km to 5km		17.4		15.2		17.5	20		
5km to 10km		15.7		15.0		15.1	18.2		
10km to 20km		13.3		16.4		13.7	15.2		
20km to 30km		17.4		7.3		6.7	5.3		
30km to 40km		3.3		12.0		3.6	2.3		
40km to 60km		1.4		2.5		3.9	2.2		
60km plus		1.3		1.7		3.6	2.7		
Other		5.9		5.4		5.7	5.1		
Travel to School	60		UK Age 5 – 10 (%)	UK Age 11 -16 (%)		5 – 10			National figures have been provided in the

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
	34	Walk 50 Car 41 Bus 9	44 22 24	<p>Numbers of children walking to school fell from 62% in 1989/91 to 50% in 2004 whilst those travelling by car rose from 27% to 41%. The average length of journey for 5-10 year olds has increased from 2.1km to 2.7km over the same time period.</p> <p>11 - 16 The numbers of children walking fell from 48% to 44% between 1989/91 and 2004 whilst those travelling by car increased from 27% to 41%. The average journey distance increased from 4.5km to 4.7km for 11-16 year olds.</p> <p>At peak time, 8.45 on weekdays in term time 1 in 4 car trips by residents in urban areas is generated by the school run.</p>		<p>absence of data for Dartford and Gravesham. Congestion caused by car trips to school and the safety implications of these levels of traffic are of national concern. Again the challenge for Dartford & Gravesham is to make walking or cycling to school an attractive proposition through the provision of safe walking and cycling routes. However the distance to school is increasing which will discourage walking. The proposed development for the area should include schools in walking distance to serve new developments.</p>
Rail	8	Managed by Southeastern	Managed by Southeastern	<p>Completion of the Channel Tunnel Rail Link in 2007 will increase capacity of network for both international and domestic passengers, and reduce journey times between Kent and London. *Completion of Thames link 2000 (in 2006) will offer areas including Dartford services to alternative London destinations.</p>		<p>The more comprehensive the train service provided the less people will use the car. Adequate park and ride facilities should be considered.</p>

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Road Infrastructure	8			<p>Kent: 203 km Motorway 210 km trunk road (118 km dual carriageway)</p> <p>There are key sections of the motorway and trunk road network in Kent where the standard of highway provided is deficient re function of the route, and noise generated.</p>		Subsidence following dry summers is already identified as a cause of road damage. Policy-makers will have to balance demand for land for new developments alongside subsidence risk, flood risk and water resource pressures.
Road Traffic Flows (vehicles/day)	8	<p>A259 = 140,000 vehicles per day on approach to Dartford Crossings Kent motorways = 65,000 vehicles per day Average A-road traffic flow = 24, 000 vehicles per day. Minor roads = average, 2200 vehicles per day. Heavy Goods Vehicles = over 1.6 million Heavy Goods Vehicles were transported by ferries from Dover in 1999, with over 800,000 lorries using the Eurotunnel. Movement of indigenous freight has also increased.</p> <p>Kent has experienced increases in heavy goods traffic-between 1980 and 1997; Heavy Goods Vehicles flows have increased by 66%, vs. national average 49%, due to Kent's proximity to mainland Europe.</p> <p>Ever-growing demand for road space is causing increased congestion, especially on the M25 at Dartford Crossing.</p>				The picture reflects the national situation with ever increasing traffic flows. Freight transport by rail and river should be encouraged to relieve Heavy Goods Vehicles pressure on the roads.
Cycling	8	<p>Aim: Double number of cycle trips in the vicinity of Dartford and Gravesend town centres, from 130 per day (2000), to 260 (2006). Kent: Double cycle use between 1996 and 2002, and again by 2012</p>				More safe cycling routes, linking residential, work and school should be a

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
		Since 1995, the length of urban cycle lanes in Kent County increased from 47km to 210km. Additionally, 180 km of national/regional routes have been completed in Kent				target for the Local Development Framework.
Public Transport	8	Increase share of people's work trips within Kent Thameside made by public transport, from 16% (2000) to 21% (2006), increasing to 30% (2010/11)				The projected development offers opportunities to seek enhanced bus/passenger services through section 106 agreements.
International Rail	4	<p>International high-speed rail services from London to the Continent through Ashford International Station accounted for 7.5 million passenger trips in 2005. The opening of the first phase of the Channel Tunnel Rail Link (CTRL) in 2003 has boosted Eurostar's flows as the journey time between London and Paris/Brussels has been reduced by some 20 minutes. This has also enabled Eurostar to improve its market share (compared to air) with maximum levels in 2005 being 71% on the London-Paris route and 64% on London-Brussels.</p>			The opening of the whole Channel Tunnel Rail Link in 2007 will cut journey times by another 15 minutes and should ensure that punctuality and reliability of the services is further improved.	To ensure that stations in Dartford & Gravesham are used to their maximum potential.

2.7 LANDSCAPE & TOWNSCAPE

Summary

Dartford and Gravesham do not contain any national parks. A small part of the Kent Downs Area of Outstanding Natural Beauty falls within the Gravesham boundary. 13% of Gravesham is categorised as urban whilst Dartford is split between a rural southern area and an urbanised northern area. The area of green space per person performs well against the figure for the County but reflects urban characteristics when compared nationally. There is significant potential for redevelopment of previously developed land, buildings and mineral or landfill sites, capable of accommodating the majority of the housing requirement for the area.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Landscape and Townscape						
National Parks		0	0	UK: 14		
Area of Outstanding Natural Beauty	14		1 - Kent Downs Area of Outstanding Natural Beauty (part)	Kent: 2 Area of Outstanding Natural Beauty covers 31% of the South East		The objectives of the Area of Outstanding Natural Beauty Management Plan should be supported by, and reflected in Gravesham's Local Development Framework.
Land Use – Areas of different users	20	The southern half of the borough is mainly greenbelt with scattered developed areas. The northern half is largely developed with some major former landfill sites	Urban = 13% Agricultural = 70% Woodland = 12% Other = 5%	Kent: Approximately 88% of county land area is rural. Over 90% of land is of the highest agricultural value.		Need to focus development on existing urban available space, in order to protect other land uses, and to monitor land utilised for development. Complications include: legacy of past industrial use (contamination and

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
		and areas earmarked for development.					dereliction and closed landfills), tidal flood plains, need for associated investment in infrastructure and environmental/social capital.
Total area of all land types (m2 thousands) in administrative area 1991	20	80,147.77	100,504.88	South East: 19,386,997.03	England: 132,323,721.060		
Area of domestic buildings (m2 thousands) 1991		2,330.12	2,502.00	255,769.79	1,507,704.90		
Area of non domestic buildings (m2 thousands) 1991		1,439.92	1,139.50	126,666.74	868,948.76		Floors above offices and retail premises are often vacant and can be brought into residential use. This not only maximises land use but also brings an evening presence and natural surveillance to town centres.
Areas of road (m2 thousands) 1991		4,489.56	3990.27	474,115.10	2,949,587.87		

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
Area of path (m2 thousands) 1991		258.78	178.53	24,400.77	143,436.17		The provision of safe and well maintained paths is vital to encourage people to walk rather than use the car.
Area of rail (m2 thousands) 1991		267.35	517.57	27,916.47	179,349.95		
Area of domestic garden (m2 thousands) 1991		8,210.94	10,159.53	1,202,344.53	5,645,140.41		Loss of domestic gardens to development can have an impact on air quality and habitat. The hard surfacing of gardens to provide parking spaces is of increasing concern due to the increase in impermeable surfacing. The LDF could specify/recommend porous surfacing should be used.
Area of greenspace (m2 thousands) 1991		50,761.93 1.7m2 per person	77,602.86 1.2 m2 per person	16,442,704.4 4 0.5 m2 per person	115,741,625. 40 4.2 per person	The area of green space per person performs well against the figure for the County but reflects urban characteristics when compared	A Green Space Strategy could ensure no loss of greenspace and improve the current situation.

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/Opportunities
						nationally.	
Area of water (m2 thousands) 1991		8,640.52	1,859.40	527,873.24	3,436,199.04		
Area of other land uses (m2 thousands) 1991		3,748.04	2,554.25	304,993.59	1,850,204.61		
Area of unclassified land (m2 thousands) 1991		0.62	0.98	212.36	1,524.56		
Total number of premises by category: (based on 2005 revaluation categories) in the administrative area							
Retail premises	20	1,045	827	South East: 73,263	England: 516,556		
Offices		359	321	50,979	320,918		
Factories		315	265	35,341	247,792		
Warehouses		292	225	27,148	192,281		
Vacant property estimates		11	5	9	9		
Vacant land:		6,180	110	26,320	178,080		Opportunities exist for the

Indicator	Source	Dartford	Gravesham	Comparators and targets		Trend	Issues/Constraints/ Opportunities
estimated dwellings							development of previously developed land.
Vacant buildings: estimated dwellings		0	240	16,140	107,680		Opportunities exist for the development of previously developed land and buildings and reduce greenfield landtake.
Derelict land and buildings: estimated dwellings		8,830	100	15,350	158,270		
Land currently in use and allocated in a local plan for any use or with planning permission for any use: estimated dwellings		0	6,960	67,840	357,490		Potential to maximise use of previously developed land.
Land that is unused or could be available for redevelopment ; estimated dwellings		15,010	7,960	160,190	986,050		Potential to maximise use of previously developed land.

2.8 CULTURAL HERITAGE

Summary

The Thames Gateway has a rich and varied historical environment that has evolved through millennia of interaction between humans and nature. At the heart of the area's historic environment lie the River Thames and its estuary, throughout history a vital corridor for trade, travel and industry. Despite this history, Dartford and Gravesham do not have as many listed buildings as many other authorities in Kent, with Dartford having 182 and Gravesham, 303 listed buildings. There are 7 Conservation areas in Dartford and 24 in Gravesham. The redevelopment of the Thames Gateway area provides opportunities to preserve existing heritage and to reference the areas industrial and maritime heritage in new development.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Cultural Heritage						
Cultural Heritage	41	The Thames Gateway has a rich and varied historical environment that has evolved through millennia of interaction between humans and nature. At the heart of the area's historic environment lies the River Thames and its estuary, throughout history a vital corridor for trade, travel and industry. Most of these inland areas have been inhabited since earliest prehistory and this rich and significant history means that the Thames Gateway is a vital repository of heritage assets, such as archaeological sites and historic buildings and townscapes all set within a complex rural historic landscape. Within Swanscombe Heritage Park, Dartford sits one of the richest Palaeolithic sites in the world and the Swanscombe Skull Site.				
World Heritage Sites	67	0	0	Kent: 1 Canterbury Cathedral, St Augustine's Abbey, and St Martin's Church UK: 27		
Historic	68	0	3			This is a low level of

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Buildings at Risk						buildings at risk and new uses and grant aid can be sought.
Number of listed buildings 2006	69	182	303	Kent: 17,321 UK: 442,000 (94% Grade II) (4.1% Grade II*) (1.4% Grade I)	Dartford and Gravesham have the least listed buildings out of all local authorities in Kent. Kent has more listed buildings than any other county	The lower level of listed buildings and conservation areas could be seen as an opportunity for innovative and sustainable architecture. This will not be over constrained by the need for local distinctiveness which can stifle design in some protected areas.
Sites and Monument Records for the District	71	988	898	UK: 95,000		
Historic Battlefields	70	0	0	Kent: 0 England: 43		
Conservation Areas	73	7	24	Kent: 481 England: 8,000	Kent has more conservation areas than any other county	
Historic Parks and Gardens	74	7	9	Kent: 60		
Scheduled	8	12	9	Kent: 345		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Ancient Monuments (SAMS)	71					

2.9 BIODIVERSITY & CONSERVATION

Summary

Dartford has four Sites of Special Scientific Interest (SSSIs), three of which are in favourable condition, one National Nature Reserve and one proposed Local Nature Reserve. Gravesham includes one Special Protection Area (SPA) North Downs Woodland, five Sites of Special Scientific Interests, four of which are in unfavourable condition, and no National or Local Nature Reserves. There are no Special Protection Areas in Dartford but both Boroughs are within proximity to the Thames Estuary & Marshes, Medway Estuary & Marshes and Benfleet & Southend Marshes. Dartford and Gravesham border the Greater Thames Estuary Coastal Natural Area.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Biodiversity						
Special Areas for Conservation (SAC)	76	0	0	Kent: 6 South East: 7 England: 229		
Special Protection Areas (SPA)	76	0	1 – Thames Estuary & Marshes	Sites within potential area of influence of Plan: North Downs Woodland Thames Estuary & Marshes Medway Estuary & Marshes Benfleet & Southend Marshes Kent: 6 Special Protection Areas for Birds: 6 England: 78		Requirement to screen for Appropriate Assessment if there are any potential impacts from the Local Development Framework.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Sites of Special Scientific Interest (SSSI)	75	4 – Wansunt Pit – Favourable Bakers Hole – Favourable Darenth Woods – Unfavourable Swanscombe Skull Site - Favourable	5 – Cobham Woods - Unfavourable Great Crabbles Wood - Unfavourable Halling to Trottiscliffe Downs (part) – Favourable South Thames Estuary & Marshes (part) – Favourable Shorne & Ashenbank Woods – Unfavourable recovering	England: 4,000 Kent: 90	The condition of Sites of Special Scientific Interest in Dartford is relatively favourable although one is unfavourable. Gravesham's sites are of a lower standard and a higher percentage are rated unfavourable.	Monitoring is necessary to ensure the continued favourable condition of the sites in Dartford and the improvement of Darenth Woods. Management plans should be put in place to improve the condition of the Gravesham sites.
Heritage Coast		0	0	Kent: 2		
National Nature Reserves (NNR)	14	1 – Swanscombe Skull Site	0	England: 215 Kent: 11		Local Development Framework policy should require protection of all nature reserves.
Local Nature Reserves (LNR)	76	Dartford Marshes – proposed LNR	0	England: 1050 Kent: 37		Protection of all nature reserves should be protected through Local Development Framework policy.
English Nature	75	Dartford and Gravesham border the		21 - South East		Protection of all nature

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Natural Areas		Greater Thames Estuary Coastal Natural Area		29 - South West		reserves should be protected through Local Development Framework policy.
Biodiversity Action plan Species	16	Kent Biodiversity Action Plan Species: Great Crested Newt Peral-bordered Fritillary Silver-Spotted Skipper Heath Fritillary Freshwater White-clawed Crayfish Allis Shad Twaite Shad Eptesicus serotinus* Luscinia megarhyncos* Ophrys fuciflora* Wolverine Otter Dormouse Early Genian				Protection from development of all protected species should be reflected through Local Development Framework policy. Opportunities should be taken to enhance habitat where possible.
Key Species	24	Key Species in Kent Thameside: Water vole, Black redstart, Brown-banded carder bee, Great crested newt, Bats, Birds associated with wetland and grazing marsh, Invertebrates associated with grassland and brownfield sites				
Biodiversity Action Plan Habitats	16	Kent Biodiversity Action Plan Habitat: Acid Grasslands Rivers and Streams Standing Open Water and Canals Heathland & Mire				All key habitats should be protected through the Local Development Framework.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		Hedgerows Intertidal Mud & Sand Lowland Farmland Marine Habitats Neutral & Marshy Grassland Old Orchards Urban Habitats Woodland & Scrub Coastal and Floodplain Grazing Marsh Coastal Saltmarsh Coastal Sand Dunes Coastal Vegetated Shingle Lowland Calcareous Grassland Lowland Wood-Pasture and Parkland Marine Cliff and Slopes Reedbeds River Darent is an important chalk habitat and designated Biodiversity Action Plan Chalk River.				
Key Habitats	24 16	Key Habitats in Kent Thameside:		Grazing marsh and associated habitats, Saltmarsh, Heathland, Lowland dry acid grassland, Calcareous grassland, Woodland, Rivers and streams, Urban habitats		

2.10 WATER RESOURCES

Summary

The abstraction, supply and use of water is a significant issue for the whole South East. The rivers Darent and Cray are both compliant with river quality targets although there are signs of deterioration. The chemical and biological quality of both rivers was assessed as good 2003-2005. Public water supply accounts for 87% of water abstracted, 81% of this from the chalk aquifer. Industry accounts for 8%, recreation 4.5% and agriculture 0.5%. Historic flood extent indicates that large areas of the River Darent floodplain, the Dartford Marshes, the Swanscombe Peninsula and the Shorne Marshes to the west of Gravesend were subject to extensive flooding during the 1953 tidal surge and that the River Darent flooded extensively in 1958, 1968, 1974 and 1978. Subsequently flood defences were raised and the level of protection against tidal and fluvial flooding was significantly improved. However, for flood events that would exceed the flood defence design standard, these areas would still be at risk. Dartford and Gravesham are at risk from all categories of pressure on surface waters. Groundwater Water Bodies at Risk from Diffuse Source Pollution Pressures probably include both Dartford and Gravesham. The Water Framework Directive (WFD) means that authorities need to consider the implications of proposed development and land use change on water now and take action in order to meet the Water Framework Directive requirements by 2015.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Water Resources						
Rivers	3 46	River Darent – compliant with current river quality targets. Western half of the catchment is heavily urbanised but the majority of the area is rural. River flows from its source in greensand, through		Thames river quality (EA site: Mardyke-TBM Intake Sluice) Passed river quality target in 2000, failed in 2001.	River chemistry in Dartford was ranked as 'very good' in 1996', 'good' between 1997-2000 and 'fairly good' in 2002. This shows a decline in river quality.	Gradual decline in river quality in Dartford could be accelerated by the impact of further development unless mitigated. River quality (Thames) is a cross boundary issue. The objectives of the Water Framework Directive must be considered in plan

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
		sandstone and chalk. It is an important chalk habitat and designated Biodiversity Action Plan Chalk River. There are 4 water dependent Site of Special Scientific Interest within the catchment area. River Cray (River Darent confluence) compliant with river quality targets.				preparation. All development should have particular regard to improving water quality (for example through using sustainable drainage techniques). Pollution control during construction (and operation) will also be important.
Chemical river water quality (2003-2005) A – Good F – Bad	50	Darent	Cray	2002 Thames rankings: Chemistry 'Poor', South East (2003 – 2005) 84% Good 9% Fair 6.7% Poor/Bad	River chemistry in Dartford was ranked as 'very good' in 1996', 'good' between 1997-2000 and 'fairly good' in 2002. This shows a decline in river quality. Thames river quality (EA site: Mardyke-TBM Intake Sluice) Passed river quality target in 2000, failed in 2001.	With proposed levels of urban development, the impact on water quality must be managed. Water quality will need to be improved to meet the requirements of Water Framework Directive.
	46 50	B	B			
Biological river water quality A – Good F – Bad	46 50	Darent A	Cray B	South East (2003 – 2005) 94% Good 4.5% Fair 1.7% Poor/Bad		In rural areas agricultural practices must take water quality into account.

Indicator	Source	Dartford		Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
River water phosphate levels 1 – very low presence of phosphates 6 – very high presence of phosphates	46 50	Darent 2	Cray 2		2002 Thames rankings: Phosphates 'V High' South East (2003 – 2005) 22.6% Good 24.4% Poor 53% Bad	2002 rankings: Chemistry 'Poor', Nitrates 'High', Phosphates 'V High' Kent: over the last 5-10 years, 'rivers of good or fair quality' have been 'going in the right direction but not fast enough to meet agreed targets.	
River water nitrate levels 1 – very low presence of nitrates 6 – very high presence of nitrates	46 50	Darent 3	Cray 3		2002 Thames rankings: Nitrates 'High' South East (2006) 50% of the South East is designated as surface or ground water Nitrate Vulnerable Zones (NVS)		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities						
Abstraction	50	<p>Flow dramatically reduced in recent years caused by over abstraction due to increased demand in public water supply.</p> <p>Public water supply accounts for 87% of water abstracted, 81% of this from the chalk aquifer. Industry accounts for 8%, recreation 4.5% and agriculture 0.5%.</p> <p>59% of abstracted water requires treatment.</p>		<p>70% of drinking water for South East provided by groundwater.</p>	<p>Under climate change scenarios existing water shortages in the South-East are likely to be exacerbated. Last summer (2006) hosepipe bans affected 16 million people in the South-East and this is likely to continue to pressure water resources in the region.</p> <p>Increased soil erosion will have knock-on effects [such as] turbidity for water quality and treatment.</p>	<p>Water management, including management of demand, will be a key issue for the proposed level of development. Good practice such as the use of sustainable drainage systems, rainwater harvesting and re-use of grey water should be considered in all developments, especially residential which accounts for 87% of abstraction.</p> <p>Policy on water neutrality for new developments should be considered.</p>						
	<table border="1"> <thead> <tr> <th data-bbox="388 1096 529 1154">Abstraction License</th> <th data-bbox="529 1096 644 1154">Amount</th> </tr> </thead> <tbody> <tr> <td data-bbox="388 1154 529 1219">Groundwater</td> <td data-bbox="529 1154 644 1219">76</td> </tr> <tr> <td data-bbox="388 1219 529 1284">Surface water</td> <td data-bbox="529 1219 644 1284">18</td> </tr> </tbody> </table>	Abstraction License	Amount	Groundwater	76	Surface water	18					
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Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities						
		<table border="1"> <tr> <td data-bbox="388 422 537 540">Total licensed abstraction</td> <td data-bbox="537 422 644 540">30 Million litres/Day</td> </tr> <tr> <td data-bbox="388 540 537 659">Ground water abstraction</td> <td data-bbox="537 540 644 659">304 Million litres/day</td> </tr> <tr> <td data-bbox="388 659 537 779">Surface water abstraction</td> <td data-bbox="537 659 644 779">2 Million litres/day</td> </tr> </table>	Total licensed abstraction	30 Million litres/Day	Ground water abstraction	304 Million litres/day	Surface water abstraction	2 Million litres/day				
Total licensed abstraction	30 Million litres/Day											
Ground water abstraction	304 Million litres/day											
Surface water abstraction	2 Million litres/day											
Properties at risk from tidal flooding	47	<p>Historic flood extent indicates that large areas of the River Darent floodplain, the Dartford Marshes, the Swanscombe Peninsula and the Shorne Marshes to the west of Gravesend were subject to extensive flooding during the 1953 tidal surge and that the River Darent flooded extensively in 1958, 1968, 1974 and 1978.</p> <p>Subsequently flood defences were raised and the level of protection against tidal and fluvial flooding was significantly improved. However, for flood events that would exceed the flood defence design standard, these areas would still be at risk.</p>	<p>Kent Thameside 1 in 1000 chance of tidal flood in any one year.</p> <p>South East: 310,000 properties at risk from coastal and river flooding</p>	<p>The risk has increased due to changes in the catchment (urbanisation, field drainage), houses built on inappropriate land encroaching on flood plains and the possible effects of climate change (increased flood generating rainfall more frequent).</p>	<p>The Environment Agency identifies Kent Thameside as vulnerable to flooding in the absence of flood defences. 'Impacts on tidal rivers are likely to be far more severe than for inland rivers'. However, the increasing probability of extreme events breaching flood defences also poses flooding risks of high magnitude, if not high probability - but still requires careful planning. Further detailed flood risk assessment should be</p>							

Indicator	Source	Dartford	Gravesham	Comparators and targets				Trend	Issues/Constraints/Opportunities		
									<p>undertaken of sites and measures taken to improve flood defences, where possible, by natural means (such as sustainable drainage systems).</p> <p>Changes in coastal processes will impact on areas where the coastline is not defended against erosion.</p>		
Tidal Flood Risk assessment for Dartford and Gravesham Borough Councils Thameside Development Areas	47			Little or no risk	Low to medium risk	High risk			The 1-in-50-year storm surge heights will increase by 20-140cm' Saltmarsh areas and high tide roosts along the Tidal Thames at risk due to rising high tide levels and increased erosion...would have serious implications for fish, invertebrates and birds.	Flood risk assessments and appropriate mitigation plans will be required for new development.	
						LH	MH	HH			VH
		Total area of development sites (hectares)	1,041	593	0	103	15	206			228
		Total dwellings in local plan	16,943	10,445	0	1,384	220	2,048			2,829
Total dwellings with full or outline planning application	5,962	2,427	0	812	135	1,793	795				

Indicator	Source	Dartford			Gravesham			Comparators and targets				Trend	Issues/Constraints/ Opportunities
		Total dwellings potential	18,185	10,884	0	1,390	220	2,814	2,870				
		Total percentage of area falling within flood risk zone		52%	0%	9%	1%	18%	20%				
Main river catchments and types	39	Dartford and Gravesham: low, small, calcareous; mid, small, calcareous; siliceous; not typed											
Surface Water Bodies at Risk from Diffuse Source Pollution Pressures	39	Dartford and Gravesham: 'at risk' (as with Estuary)										Plan documents should include provisions to minimise diffuse and point source pollution.	
Surface Water Bodies at Risk from Point Source Pollution	39	Dartford and Gravesham: 'at risk' (as with Estuary)										Plan documents should include provisions to minimise diffuse and point source pollution.	

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Pressures						
Surface Water Bodies at Risk from Morphological Pressures	39	Dartford and Gravesham: 'at risk'				LDF will need to consider risks to water bodies from significant changes to landforms undergoing development.
Surface Water Bodies at Risk from Alien Species Pressures	39	Data Gap		Thames Estuary: 'probably at risk'		Increased development close to water bodies may lead to an increase in eutrophication and the introduction of alien species.
Surface Water Bodies at Risk from All Pressure Categories	39	Dartford and Gravesham: 'at risk'				Dartford and Gravesham at risk from all categories of pressure on surface waters. This will need to be given serious consideration in the plan development to meet requirements of Water Framework Directive.
Groundwater Water Bodies at Risk from Point Source	39	Dartford and Gravesham: probably not at risk				

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Pollution Pressures						
Groundwater Water Bodies at Risk from Diffuse Source Pollution Pressures	39	Mostly 'probably at risk'				Local Development Framework should seek to minimise groundwater pollution from new developments.
Groundwater Bodies Which May Require Lower Quantitative Objectives	39	Includes Dartford and Gravesham groundwaters (but not the majority of the Thames catchment)				
Groundwater Bodies Which May Require Lower Chemical Objectives	39	Includes Dartford and Gravesham, in common with the rest of the Thames Estuary, and approximately half of the Thames Catchment				
Indicative Floodplains and Coastal Flooding	39	Flood risk from the Thames is reduced by flood defences. Some areas further inland are at risk from flooding by smaller rivers although this is localised.		Kent: 'properties at risk from floods' have, over the past 5-10 years, been 'going in the wrong		Flood defences considered adequate until 2030, possibly beyond, but there remain risks from increased

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
				direction'		extreme events. The Plan should consider mechanisms to reduce flood risk including appropriate land uses in areas of flood risk.

2.11 AIR QUALITY

Summary

Dartford has four Air Quality Management Area and Gravesham has five, with Nitrogen Dioxide and Particulate mater being the key pollutants of concern. With the scale of redevelopment proposed for the two Boroughs, significant attention should be given to ensuring new development minimises car travel and maximises alternative forms of transport. Short term construction impacts may also affect air quality.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Air Quality						
Air Quality Management Areas (AQMA)	9 19	<p>1) A282 Tunnel approach road, Dartford Air Quality Management Areas (Nitrogen Dioxide NO2 & Particulate Matter < 10 µm PM10)</p> <p>2) London Road Air Quality Management Areas (Nitrogen Dioxide NO2 & Particulate Matter < 10 µm PM10)</p> <p>3) Town Centre & Approach Roads</p>	<p>1) Gravesham A2 Air Quality Management Areas (Nitrogen Dioxide NO2 & Particulate Matter < 10 µm PM10)</p> <p>2) Northfleet Industrial Area Air Quality Management Areas (Particulate Matter < 10 µm PM10)</p> <p>3) Gravesham A227 Wrotham Road/B271 Old Road West Air Quality Management Areas (Nitrogen Dioxide NO2)</p>		With three new Air Quality Management Areas in Gravesham this indicates worsening air quality.	<p>With the proposed level of new development there may be opportunities to manage traffic away from the Air Quality Management Areas and improve public transport and walking and cycling routes.</p> <p>New development should not exacerbate the current situation.</p> <p>Air Quality will be a particular concern for planning and redevelopment as any additional development</p>

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		<p>Air Quality Management Areas (Nitrogen Dioxide NO₂)</p> <p>4) Bean Interchange Air Quality Management Areas (Nitrogen Dioxide NO₂)</p>	<p>4) Gravesham A226 one-way system Air Quality Management Areas (Nitrogen Dioxide NO₂)</p> <p>5) Gravesham B262/B261 Pelham Arms Junction Air Quality Management Areas (Nitrogen Dioxide NO₂)</p>			<p>has the potential to increase air pollution. Wherever possible, opportunities should be sought to reduce vehicle traffic, for example through demand management and increased amenity to encourage walking and cycling.</p>
Automatic air monitoring sites	45	<p>3 – all measuring Nitrogen Dioxide NO₂ & Particulate Matter < 10 µm PM₁₀</p> <p>Dartford roadside 1 (DR1) – St. Clements</p> <p>Dartford roadside 2 (DR2) – Town Centre</p> <p>Dartford roadside 3 (DR3) – Bean Interchange</p>	<p>3</p> <p>Gravesend Ind Bgd (GIB) – Northfleet Nitrogen Dioxide NO₂, Particulate Matter < 10 µm PM₁₀ & Sulphur Dioxide SO₂</p> <p>Gravesend roadside (GR) – A2 Nitrogen Dioxide NO₂, Particulate Matter < 10 µm PM₁₀ & Sulphur Dioxide SO₂</p>			<p>Continued monitoring of air quality should be used to assist in adjusting demand management measures over time (for example, changes to parking arrangements in the town centre).</p>

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
			Gravesend background (GB) – Northfleet Nitrogen Dioxide NO2			
Diffusion Tubes monitoring NO2	45	51 (18 of which have ended monitoring)	97 (29 of which have ended monitoring)			
Number of days when air pollution reported as moderate or high	45	Dartford roadside 1 - 1 day Nitrogen Dioxide NO2 moderate		Targets are for 2005, so exceedences could not occur although last year's figures exceeded N targets for 2005 (see Dartford 1N & Gravesend 6N), & Sulphur Dioxide SO2		
Average daily (24 hour) mean pollutant concentration in $\mu\text{g m}^{-3}$ between 01.01.06 and 01.01.07	48					
Benzene		Data Gap	Data Gap			
1,3-Butadiene	48	Data Gap	Data Gap			
Carbon monoxide	48	Data Gap	Data Gap		Kent: over the last 5-10 years, this indicator has been 'going in the right	With proposed development, it is likely that the area's total emissions

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
					direction but not fast enough to be considered stable or to meet agreed targets'	will increase, although it would be interesting to monitor per capita emissions/ecological footprint, which could be relatively efficient due to potential new public transport infrastructure.
Lead	48	Data Gap	Data Gap			
Nitrogen Dioxide (NO2)	48	Dartford roadside 1 – 63.2 Dartford roadside 2 – 51 Dartford roadside 3 – 57.4	Gravesend Ind Bgd – 29.1 Gravesend roadside - 52	National Air Strategy Targets: Nitrogen Dioxide NO2 40µg/m3 Annual mean (to be achieved by 31/12/05) Carbon Monoxide CO 10mg/m3 max daily running mean (31/12/03) Particulate Matter < 10 µm PM10 40µg/m3 Annual mean (31/12/04) Sulphur Dioxide SO2 20µg/m3 Annual mean (31/12/00)		Only limited data for Nitrogen Dioxide NO2 & Sulphur Dioxide SO2 found. Info Gap - trends
Particles measuring 10mm or less	48	Dartford roadside 1 – 38.7 Dartford roadside 2	Gravesend Ind Bgd – 34.3 Gravesend roadside		Overall concentrations of Particulate Matter < 10 µm PM10 at	

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
(PM10)		- 37 Dartford roadside 3 - 36.5	- 34.7		Gravesend background and Gravesend roadside decreasing.	
Sulphur dioxide	48	Data Gap	Data Gap			

2.12 CLIMATIC FACTORS

Summary

Climate change is one of the greatest environmental challenges and the South East is particularly vulnerable due to rapid population growth, potential water shortages and risk of extreme flooding. The region produces the greatest volume of carbon dioxide emissions in the UK and energy from renewable sources accounts for only 0.65% of total current generating capacity compared to the UK national average figure of 2.5%. Data at a local level is still not widely available but national trends indicate adverse impacts on wildlife habitats and biodiversity, the landscape, the economy and housing.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Topic: Climatic Factors						
Climatic Changes	2	South East: Over the past century average temperature has risen by 0.5oC and summer rainfall has decreased.				
Greenhouse gas emissions	2	Data Gap	Data Gap	UK: 718.5 million tonnes in 2001	The six greenhouse gases fell by 14.6% between the base year, 1990 and 2004	Again, the proposed new development offers opportunities for improved public transport and walking and cycling facilities thereby helping reduce greenhouse gas emissions.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities		
Carbon dioxide emissions	2 58	Dartford kg Carbon Dioxide CO2 / Dwelling - 5,430	Gravesham kg Carbon Dioxide CO2 / Dwelling - 5,406	SOUTH EAST Total emissions 2004 (million tonnes carbon dioxide)				Sustainable construction and management of energy demand through more efficient buildings should be a major target for the planning authorities. Improvements to public transport and the sustainable location of new development should be key issues.
				Industrial, commercial & public	Domestic	Road transport	Total	
				25	21	23	69	
				SOUTH EAST Per capita emissions 2004 (tonnes carbon dioxide per resident)				
				Industrial, commercial & public	Domestic	Road transport	Total	
				3.1	2.7	2.9	8.7	

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
				<p>South East total carbon dioxide emissions in 2006 approximately 71 million tonnes</p> <p>UK Net emissions of carbon dioxide during 2006 have provisionally been estimated at around 560.6 million tonnes, about 5¼% lower than the 1990 level of 592.1 million tonnes.</p>	<p>The South East produces the greatest volume in the UK and overall the country has seen a rise in emissions of 12.4% since 1990.</p>	
Annual Average Concentration of Major Gases	58	<p>Annual Mean Nitrogen Dioxide NO2 (2006) Dartford 1N =57 µgm-3 Dartford 5N =38 Dartford 7N =46</p>	<p>Annual Mean Nitrogen Dioxide NO2 (2005) Gravesend 5N =31 µgm-3 Gravesend 6N =40 Gravesend 7N =54</p>	<p>National Air Strategy Targets: Nitrogen Dioxide NO2 40µg/m3 Annual mean (to be achieved by 31/12/05)/ Carbon Monoxide CO 10mg/m3 max daily running mean (31/12/03)/ Particulate Matter < 10 µm PM10 40µg/m3 Annual mean (31/12/04)/ Sulphur Dioxide SO2 20µg/m3 Annual mean (31/12/00)</p>		<p>Reducing Nitrogen Oxide, Carbon Monoxide and Particulates should be given high priority. Traffic reduction will be a key way of achieving this.</p>
Current Renewable Generation	53	Data gap	Data gap	South East: 73 Mega Watts 1 Mega Watts – Onshore Wind	Renewables account for only 0.65% of total current generating	New development offers opportunities to incorporate energy from

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Capacity				72 Mega Watts – Energy from Waste	capacity in the region compared to the UK national average figure of 2.5%	renewable sources. The Local Development Framework can now set targets for the inclusion of renewable energy and also policies to facilitate provision of macro and micro generation.
Target Renewable Generation Capacity	53			South East: 750 Mega Watts by 2010 – equal to 6.6% of current electrical generation capacity.		This should be reflected in the Local Development Framework.
Mean sea level in the English Channel	2 26 38			'sea level will rise 60-120cm in the South East over the next hundred years'		Vulnerability of new development sites could be an issue, given dependency on flood defences into perpetuity. Green Infrastructure may therefore be particularly important as a flood overflow defence.
Ecology	4	Predictions include: -coastal squeeze and/or conflict of interest with internationally designated habitats -increased erosion affecting coastal habitats/species -altered sedimentation impacts upon estuary, dune, and harbour habitats -reduced summer rainfall, and increased				Climate change is one of three key issues facing the Kent environment, along with growth and development, and transport. Mitigation could include provision of more habitat

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		human demand, may have detrimental effects on river/wetland ecology -potential benefits for warm climate species -potential lack of opportunity for migration in the face of climate change/fragmentation -increased extreme events may increase local extinctions -likely long-term changes in the composition of vegetation and faunal communities				during coastal development to obviate coastal squeeze, establishment of the green grid for biodiversity to combat fragmentation, water strategies, and so forth.
Cultural heritage, leisure and tourism	4	Predictions include: - landscape changes due to ecological changes -direct impact on buildings/artefacts, by pests and effects of humidity, rainfall, windspeed - stress on archaeological sites due to potential drop in the water table - increased opportunities for outdoor leisure/beach holidays - river navigation difficulties during dry periods.				By trying to manage the implications of development on climate change, the Local Development Framework can assist in reducing the impacts listed opposite in the long term.
Economic sectors	4	- a rise in sea level concerns economic activities focused around coasts - secondary or manufacturing industries e.g. paper manufacturing, are vulnerable to the costs and availability of raw material such as water				

2.13 SOIL & MINERALS

Summary

There are three main soil types in Kent and much of the land is of the highest agricultural quality. Land provision will be made in Kent sufficient to secure and maintain production of 2.37 million tonnes of sand and gravel per year and 1.2 million tonnes of ragstone. Kent and Medway will make provision to maintain at least a 7 year landbank of planning permissions which is sufficient until 2020 to deliver 2.53 million tonnes per annum of sand and gravel, and 1.2 million tonnes per annum of crushed rock (ragstone) whilst also addressing the issue of excessive landbanks. Proposals for the working of gravel and concreting sands permitted within the following preferred areas: for flint derived gravels - Dartford Fresh Marshes - Land at Dartford Marshes - Land at University Site, Joyce Green, Dartford. Kent proposes a significant increase in the use of secondary and recycled materials from 5% to some 15%. 15% of the surface area has been worked for minerals at some point.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Topic: Soil and Minerals						
Major Soil groups	21	<p>3 main soil types in Kent: alkaline soils forming on chalk geology. Podsol: Nutrient poor, acidic soils forming on greensand geology. Gelyed soils: Rich, fertile soils forming on clay geology.</p> <p>South East: - Shallow lime-rich soils over chalk - Freely draining lime-rich loamy soils - Freely draining acid loamy soils - Slowly permeable, seasonally wet, slightly acid but base-rich loamy and clayey soils - Naturally wet, very acid sandy and loamy soils</p>		Rendzina: Thin brown,		
Plan area's permitted reserves: Sand	57	Kent's current landbank for crushed rock is 38 million tonnes.				

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
and Gravel						
Targets: Sand and Gravel	57	Land provision will be made in Kent sufficient to secure and maintain production of 2.37 million tonnes of sand and gravel per year and 1.2 million tonnes of ragstone. These figures allow separate plan proposals to be made in Kent, where necessary, for: <ul style="list-style-type: none"> • mainly flint derived gravels at 0.95 million tonnes per annum; • mainly sandstone derived gravels at 0.28 million tonnes per annum; • building sand at 1.14 million tonnes per annum; (which together total 2.37 million tonnes per annum)				This is a concern of the Minerals and Waste Development Framework.
Local mineral resources	57	The target in East Kent sets an increase in the contribution from local land through major production from underground resources from 27% to 40%. But at the same time reducing the amount of land being used in Kent for surface mineral working. Limestone worked from underground is seen in principle as a preferable long term alternative to local surface working in Kent; and in particular to locally sourced flint gravels. Kent and Medway will make provision to maintain at least a 7 year landbank of				

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		planning permissions which is sufficient until 2020 to deliver 2.53 million tonnes per annum of sand and gravel, and 1.2 million tonnes per annum of crushed rock (ragstone) whilst also addressing the issue of excessive landbanks.				
Gravel and concreting sands	57	<p>Proposals for the working of gravel and concreting sands permitted within the following preferred areas:</p> <p>For flint derived gravels</p> <ul style="list-style-type: none"> - Dartford Fresh Marshes - Land at Dartford Marshes - Land at University Site, Joyce Green, Dartford 				
Recycled aggregates	57	<p>Kent:</p> <p>A significant increase in the use of secondary and recycled materials from 5% to some 15%.</p> <p>Land provision will also be made in Kent to secure the use for the collection, process, storage and transport of construction aggregate of at least 1.4 million tonnes per annum of secondary and recycled materials.</p>				Recycling of demolition materials on site should be mandatory.
Imported aggregates	57	At present Kent produces and imports 10 million tonnes of aggregates each year.				

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		<p>However the aim in the long term is to decrease the proportion of imported aggregates (both crushed rock and marine dredged aggregates). Beyond 2020 when local limestone is being mined, it is anticipated that imported aggregates would be contributing 45% of Kent's total construction aggregate requirements (compared to 65% now).</p>				
Contaminated Land		<p>15% of surface area has been worked for minerals at some point.</p>				<p>Contaminated land may hinder development, on account of being classed as waste by European Court and therefore potentially requiring additional investment to proceed. However development may offer opportunities to improve degraded landscapes.</p>

2.14 WASTE

Summary

Dartford has one of the lowest recycling rates in the country but has improved between 2001/2002 and 2004/2005 from: 5.67% to 14.62%. Gravesham's performance has improved from 8.47% to 20.4%. The overall target for Kent is to achieve 40% recycling and composting by 2012/2013, currently it is only 30% - of which: 40% = dry recyclables, 27% = green waste, 21% = soil and rubble. However the household waste arising (per person) in Dartford are the highest in Kent at 453 kg per person whilst the household waste arising (per person) in Gravesham are very low at 369.2 kg.

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/ Opportunities
Topic: Waste						
Number of Contaminated Land Sites/Landfill	11	Dartford has 2 household, commercial and industrial waste landfill sites.				With pressure on land for other uses and the potential impacts on soil and water quality, land for landfill sites should be kept to a minimum and all other methods considered first.
Municipal Solid Waste (tonnes)	54			Kent residents: 811,000 tonnes / year equivalent to 1.4 tonnes/household of which 70% went to landfill and 30% was recycled or composted.	Kents Municipal Solid Waste increased from 754,188 tonnes in 2001 to 826,061 in 2004 (an increase of 8.7%) then fell to 811,000 tonnes between 2005/06.	Over the next 20 years approximately 80,000 new homes are planned to be built in Kent. This will lead to the amount of waste increasing so it is essential that waste produced by households is minimised
Household Waste	56	33,727	30,065			
Non household waste		1918	620			
					Dartford and	

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Total		35645	30685		<p>Gravesham the lowest producers of Municipal Solid Waste in the county along with Dover.</p> <p>Dartfords rate of growth in Municipal Solid Waste during 2004/5 is below the Kent average at 1.73%. The household waste arising (per person) in Dartford are the highest in Kent at 453 kg per person.</p> <p>Gravesham Borough Council's rate of growth in Municipal Solid Waste during 2004/5 is above the average for Kent at 3.31%. The household waste arising (per person) in Gravesham are very low at 369.2 kg.</p>	<p>New development should provide space for storage of recycling bins and wherever possible composting.</p>
Recycled material		1419	1657			
Materials Recycling Facility recyclables		4354	5448			
Composted		0	0			
Soil/rubble recycled		0	0			
Total		5773	7105			
Total Municipal Solid Waste (tonnes)		41,418	37,790			

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
Recycling	54 56	2001/2002: 5.67% 2004/2005: 14.62%	2001/2002: 8.47% 2004/2005: 20.4%	Kent's target is to achieve 40% recycling and composting by 2012/2013, currently only 30% - of which: 40% = dry recyclables 27% = green waste 21% = soil and rubble	Dartford has one of the lowest recycling rates in the county. Within Kent recycling rates have increased at Household Waste Recycling Centres and in the Districts (Waste Collection Authorities) by over 13% and 9% respectively since 2001	
Collection Arrangements	56	The waste collection service provided by a private contractor. This contractor also undertakes street cleansing services. Dry recyclables including paper, cardboard, cans, dense plastics and plastic film are collected from the kerbside on a weekly basis via a 55L box.	The waste collection service is an 'in-house' function. Dry recyclables including paper, cans, foil plastics and card are collected from the kerbside on a weekly basis in clear sacks. Green waste is currently not collected. Non recyclable refuse is collected on a weekly basis in black	Kent: 95% of waste is collected from doorstep collections, which accounts for 52% of the waste going to landfill. The County produces 534 kg of household waste pp (national average 533.5 kg) and the cost of the disposal service is £44.30/tonne which is higher than the national average of £40.70/tonne.		

Indicator	Source	Dartford	Gravesham	Comparators and targets	Trend	Issues/Constraints/Opportunities
		<p>Non recyclable refuse is collected on a weekly basis via a wheeled bin and the quantity of waste is unlimited, as side waste is permitted, and garden waste is currently permissible in the wheeled bins for refuse. The cost of collection per household is relatively high at £32.50.</p>	<p>sacks (provided by the Authority, 15 per quarter) and the quantity of waste collected is unlimited. The cost of collection per household is low at £23.31 per annum.</p>	<p>The authority currently disposes of its waste through five landfill contracts. The County provides 18 Household Waste Recycling Centres (HWRCs) including the composting of green waste.</p>		
Recycling Sites 2007	21	20	15			

Data Sources for Appendix 2: Baseline

1. Rising to the Challenge: Impact of Climate Change in the South East in the 21st-Century (1999)
2. 2002 South East Climate Summary Report. Climate South East
3. Southeast Climate Change Guide Part 2; Impacts. Climate Change Impacts - Looking Ahead to the Southeast: a Guide from the Southeast Climate Change Partnership. November 2002
4. Rising to the Challenge: Impacts of Climate Change in the Southeast and the 21st Century; Technical Report. November 1999.
5. Census 2001 – Office of National Statistics
6. South East Plan Consultation Draft (2004)
7. South East Regional Housing Study 2004/05 to 2005/06
8. Kent Local Transport Plan (2001/02 to 2005/06)
9. Air Quality Archive (www.airquality.co.uk) Accessed 16/03/05
10. Area Investment Framework Document Thames GatewayKent Partnership
11. Environment Agency Website www.environment-agency.gov.uk Accessed 03/05
12. Dartford Borough Council, Contaminated Land Strategy 2001
13. Gravesham Borough Council, Contaminated Land Strategy 2001
14. Dartford Borough Council, Amended Second Deposit draft Local Plan

15. Kent Health and Affordable Warmth Strategy (undated)
16. Kent Biodiversity Action Plan www.ukbap.org.uk
17. Dartford Homeless Strategy 2004
18. BBC News website UK House prices (accessed 16/03/06)
19. Gravesham Borough Council Website, Air Quality (Accessed 10/03/05)
20. Census 1991 (obtained from the Office of National Statistics by request)
21. www.gravesham.gov.uk
22. The English Indices of Deprivation 2005 (Revised) ODMP
23. www.kent.gov.uk
24. Kent Wildlife Trust correspondence
25. Kent Wildlife Trust website
26. Conversation with Environment Agency (Peter Borrows, Thames Estuary Strategy Leader, 18/2/05)
27. Kent Environmental Strategy 2003
28. Growth and Regeneration in the Thames Gateway: Inter-regional Planning Statement by the Thames Gateway Regional Planning Bodies (2004). Published by the ODPM, on behalf of East of England Regional Assembly, Mayor of London, South East England Regional Assembly
29. Area Investment Framework Document Thames Gateway Kent Partnership
30. SEEDA Economic and Business Bulletin 2003

31. Communication from Dartford Borough Council, 21/3/2005
32. Claimant Count with Rates and Proportions (Jobseekers Allowance, Dartford). From Nomis 21 March 2005. Provided by Dartford Borough Council.
33. Dartford IMD data, provided by Dartford Borough Council in 2005 (presumed re 2004)
34. NVQ data provided by Dartford Borough Council (from Nomis Sept 2003), received March 05
35. Seeds of Change 2: a vision and outline plan for health services in Dartford, Gravesham, Swanley and the Sevenoaks Northern Parishes; 2003-2016 (15 July 2004)
36. Gravesham Borough Council Housing Strategy Statement 2002-2007
37. Integrated Regional Framework 2004: A Better Quality of Life in the Southeast. SEERA, GOSE, SEEDA, EA, DoH, South East Forum for Sustainability, Regional Action and Involvement Southeast
38. Tidal Thames Habitat Action Plan. Thames Estuary Partnership Biodiversity Action Group
39. WFD (Thames) <http://www.defra.gov.uk/environment/water/wfd/article5/index.htm?lang=e>
40. Kent Environment Strategy: 2005 Progress Report; a Summary
41. Growing Places: Heritage and a sustainable future for the Thames Gateway. <http://www.english-heritage.org.uk>
42. <http://www.kentrigs.org.uk/bluewater.html>
43. English Nature- response to consultation 25/5/05
44. Defra estimated CO2 emissions 2003 <http://www.defra.gov.uk/environment/statistics>

45. Kent County Council 2006, *Air monitoring sites*, [online] available: <http://www.kentair.org.uk/kent/asp/data.asp> [accessed 27 March 2007]
46. Environment Agency 2006, *The Darent and Cray Catchment Abstraction Management Strategy – Consultation Document*, [online] available: <http://publications.environment-agency.gov.uk/pdf/GESO0806BLET-e-e.pdf?lang=e> [accessed 28 March 2007]
47. JBA Consulting 2005, *Kent Thameside Delivery Board Strategic Flood Risk Assessment of Kent Thameside* [online] available: http://www.kts.co.uk/kts02/pdfs/FR_main.pdf [accessed 28 March 2007]
48. Kent County Council 2007, *Average daily (24 hour) mean pollutant concentration*, [online] available: <http://www.kentair.org.uk/kent/asp/AdvStats.asp?advstats=Various&Submit.x=24&Submit.y=19> [accessed 27 March 2007]
49. Kent County Council, *Local Transport Plan*, [online] available: http://www.kent.gov.uk/static/local-transport-plan/section_3.html [accessed 25th March 2007]
50. Environment Agency 2005, *River Quality – Dartford*, [online] available: <http://maps.environment-agency.gov.uk/wiyby/wiybyController> [accessed 29 March 2007]
51. Natural England 2007, *Condition of SSSI Units*, [online] available: <http://www.englishnature.org.uk/special/ssi/reportAction.cfm?Report=sdr13&Category=C&Reference=1023> [accessed 27 March 2007]
52. Defra Rural Statistics Unit 2001, *Dartford - Census 2001 and Access to Services Focus on Rural Areas*, [online] available: http://www.defra.gov.uk/rural/ruralstats/rural_focus/LAs/LA_SouthEast/Dartford.pdf [accessed 30 March 2007]
53. Government of the South East 2000, *Development of a Renewable Energy Assessment and Targets for the South East*, [online] available: <http://www.tvenergy.org/pdfs/FinalReport.pdf> [accessed 3 April 2007]
54. Kent Waste Forum 2006, *Joint Municipal Waste Management Strategy*, [online] available: <http://kent.gov.uk/NR/rdonlyres/1A5A8C82-A25B-42C8-B1ED-69B4D827196F/0/Item7Wastestrategy.pdf> [accessed 3 April, 2007]
55. Dartford Borough Council 2006, *Casino Application*, [online] available: <http://www.culture.gov.uk/cap/proposals/Dartford.pdf> [accessed 3 April 2007]

56. Kent County Council 2005, *Kent Municipal and Solid Waste Baseline Report*, [online] available: <http://www.kent.gov.uk/NR/rdonlyres/F1EFFE2C-AA3B-4C2C-9471-1FC9EA432FB5/4352/baselineraporfinaldec05.pdf> [accessed 3 April 2007]
57. Kent County Council 2006, *Kent Minerals Development Framework: Core Minerals*, [online] available: <http://www.kent.gov.uk/NR/rdonlyres/B86416CA-1844-4C81-8F12-D80C72475A2E/0/061102coremindpd.pdf> [accessed 3 April 2007]
58. Defra 2006, *Local and Regional CO2 Emissions Estimates for 2004 for the UK* [online] available: <http://www.defra.gov.uk/environment/statistics/globalatmos/regionalrpt/laregionalco2rpt20061127.pdf> [accessed 3 April 2007]
59. Kent County Council 2005 *Mid Year Population Estimates* [online] available: <http://www.kent.gov.uk/publications/community-and-living/2005-my-population-est.htm>
60. Kent County Council Travel to Work Report – Source Statistics 2001 Census Special Workplace Statistics table
61. Dartford Borough Council 2007 Common Housing List
62. Dartford Borough Council 2006 *Dartford's Local Development Framework Framework – Annual Monitoring Report*. [online] available: <http://www.dartford.gov.uk/planningpolicy/documents/AMR05.06FinalReport.pdf>
63. Kent County Council 2007 *Town Centre Health Indicators – Dartford*. [online] available: <http://www.kent.gov.uk/NR/rdonlyres/3415F95F-DECA-4751-A55F-202B03F291F1/0/dartfordtchijan2007version.pdf>
64. Kent County Council 2005 *Dartford Borough – Employment Land Monitoring Survey: 2004/05*. [online] available: <http://www.kent.gov.uk/NR/rdonlyres/9CFCC9EC-217B-4C83-ABB4-F9557FEBD400/0/dartford05els.pdf>
65. Kent County Council 2006 *Commercial Information Audit Monitoring Survey Report 2005/06*.
66. Kent County Council 2007 *Town Centre Health Indicators – Gravesham*. [online] available: <http://www.kent.gov.uk/NR/rdonlyres/54E1F26C-DD98-4DFA-92C6-093AA0925CCD/0/gravesham05els.pdf>
67. World Heritage, The List, [online] available: <http://whc.unesco.org/en/list>

68. English Heritage. Buildings at Risk Register. <http://www.english-heritage.org.uk>
69. English Heritage. Listed Buildings Register <http://www.english-heritage.org.uk>
70. English Heritage 2005, Historic Battlefields, [online] available:
<http://www.englishheritage.org.uk/server/show/nav.1436?PHPSESSID=d6c76eec2ae6cf5fa32a0a5a30f52477>
71. South East Historic Environment Forum 2006, The State of the South East's Historic Environment 2006 [online] available: http://www.english-heritage.org.uk/hc2006/upload/pdf/HC_2006_South_East_DATA.pdf
72. Dartford Borough Council website. Conservation Areas. <http://www.dartford.gov.uk/planning/conservation.htm>
73. Gravesham Borough Council website. Conservation Areas. <http://www.gravesham.gov.uk/index.cfm?articleid=3673>
74. English Heritage Register for Parks and Gardens of Historic Interest. <http://www.english-heritage.org.uk>
75. Natural England 2007, Sites of Special Scientific Interest, Local Nature reserves, Natural Areas, <http://www.english-nature.gov.uk>
76. Joint Nature Conservation Committee. <http://www.jncc.gov.uk/>