Additional Evidence – Parking

Section 1

This statement presents additional evidence to support the Residential Parking Standards as proposed by Table A5(2) in Appendix 5 of the Revised Proposed Submission Development Management DPD (DM DPD) (as amended). It provides further information from the Census 2011 and accompanies the evidence already set out in the following documents (available on the Councils website):

- Essex Planning Officers Association - Parking Standards: Design and Good Practice (2009)
- Southend-on-Sea Parking Review (2011)
- Southend-on-Sea Parking Review Addendum (2013)

The Parking Standards set out in the DM DPD propose 'appropriate' and 'minimum standards' for the Southend Central Area and Rest of the Borough respectively. These areas are the focus of the evidence presented here and together constitute the entire Borough of Southend.

For the purpose of this statement the term 'car' comprises 'cars and vans'.

Table 1: Car Ownership Levels in Southend and all constituent Wards (2011 Census)[1]

	All Households	Households with no cars	Households with one car	Households with two cars	Households with three cars	Households with four or more cars	All cars in the area	Own at least 2 cars	Cars per household
	Total	%	%	%	%	%	Total	%	%
Belfairs	4173	20.9	44.7	27	5.5	1.9	5160	34.4	1.23
Blenheim Park	4279	23.3	44.3	25.6	5.4	1.4	5052	32.4	1.18
Chalkwell	4369	27.1	45.8	21.3	4.3	1.4	4704	27	1.07
Eastwood Park	3982	15.4	43.3	31	7.6	2.7	5564	41.3	1.39
Kursaal	5087	44.7	41.2	12.1	1.6	0.4	3651	14.1	0.71
Leigh	4608	22.2	52.6	21	3.3	0.9	4991	25.2	1.08
Milton	5199	44.6	42.1	11.4	1.5	0.4	3689	13.3	0.71
Prittlewell	4208	24.3	44	24.3	5.6	1.8	4941	31.7	1.17
Shoeburyness	4782	25	45.9	22.6	5.1	1.2	5358	28.9	1.12
Southchurch	4065	25.5	42.1	25.1	5.7	1.5	4733	32.3	1.16
St Laurence	4205	21	44.5	26.8	5.7	2	5231	34.5	1.24
St Luke's	4646	27.2	46.7	21.2	3.9	1	4897	26.1	1.05
Thorpe	3921	15.7	45.1	29	7.4	2.8	5405	39.2	1.38
Victoria	4965	48.6	38.7	10.2	1.8	0.7	3367	12.7	0.68

[1] Note; Table 1 amends a previous error associated with % values for Table 3, row: 'Southend-on-Sea', of the Southend-on-Sea Parking Review Addendum (2013)

West Leigh	3840	13.4	46.4	32.1	5.9	2.1	5276	40.1	1.37
West Shoebury	3963	21.1	41.1	28.7	7.2	1.8	5093	37.7	1.29
Westborough	4386	29.7	49.5	17.2	2.7	0.8	4192	20.7	0.96
Southend	**74,678**	**27.3%**	**44.5%**	**22.2%**	**4.6%**	**1.4%**	**81,304**	**28.2%**	**109%**

Table 1 outlines that approximately 28% of households in Southend own at least 2 cars. The impact of not providing sufficient parking for these cars, particularly accounting for the cumulative impact of households that have 3, 4 or more cars, may lead to adverse effects on the appearance of streets affected, an over-reliance on on-street parking and, in some cases, an oversaturation of capacity resulting in even wider detrimental impacts. It should be noted that the Sustainability Appraisal of the Schedule of Modifications[2] highlights that additional on-street parking may have an impact on existing character, even if there is available capacity.

Average car ownership per area provides an indication of the total amount of cars in an area, and can provide an indication of the cumulative impact of those households with more than 2 cars. Average car ownership per household in Southend is 1.09. Within 13 of the 17 Southend Wards car ownership exceeds 1 car per household on average; for the Wards that comprise the 'Rest of the Borough' this equates to 13 out of 14 Wards. The cumulative impact of multiple car ownership is explored further in Section 2 of this statement.

Table 2: Car Ownership Levels in Southend, Central Area and the Rest of the Borough (2011 Census)

	All Households	Households with no cars or vans	Households with one car or van	Households with two cars or vans	Households with three cars or vans	Households with four or more cars or vans	All cars or vans in the area	Own at least 2 cars or vans	Number of cars and vans per household
	Total	**%**	**%**	**%**	**%**	**%**	**Total**	**%**	**%**
Southend	74,678	27.3	44.5	22.2	4.6	1.4	81,304	28.2	1.09
Central Area[3]	15,251	46.0	40.7	11.2	1.6	0.5	10,707	13.3	0.70
Rest of Borough[4]	59,427	22.5	45.5	25.0	5.3	1.6	70,597	32.0	1.19

Table 2 highlights that the proportion of households that owns 2 cars or more is greater for the 'Rest of the Borough' (32%) when compared to the Central Area (13%) and for Southend as a whole (28%). This trend is replicated in respect to the number of cars per household.

Average car ownership increases to 1.19 when considering the 'Rest of the Borough'.

[2] Sustainability Appraisal of the Development Management Submission Document – Schedule of Modifications

[3] For the purpose of this statement the Southend Central Area comprises the Wards of: Victoria, Kursaal and Milton. Although this does not precisely mirror the proposed Southend Central Area boundary as defined by the DM DPD Policies Map, these three wards provide a good reflection of car ownership in Southend Central Area

[4] For the purpose of this statement the 'Rest of the Borough' comprises all the Wards of Southend excluding Victoria, Kursaal and Milton.

Table 3 Car Ownership Levels in Southend by household type and size (2011 Census) - All occupied households (excluding caravans or other mobile or temporary structures)

		All Households	Households with no cars or vans	Households with one car or van	Households with two cars or vans	Households with three cars or vans	Households with four or more cars or vans	Own at least 2 cars or vans
Southend	**Total**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
All Accommodation	Total	74,645	27.3%	44.5%	22.2%	4.6%	1.4%	28.2%
	1 bed	13,060	56.2%	38.2%	4.9%	0.5%	0.2%	5.6%
	2 beds or more	61,585	21.2%	45.9%	25.9%	5.4%	1.7%	**33.0%**
House or Bungalow	Total	49,823	17.9%	44.8%	28.9%	6.4%	2.0%	37.3%
	1 bed	1,440	46.6%	42.0%	9.9%	1.5%	0.1%	11.4%
	2 beds or more	48,383	17.0%	44.9%	29.5%	6.6%	2.0%	**38.1%**
Flat, maisonette or apartment	Total	24,822	46.2%	44.0%	8.7%	0.8%	0.3%	9.8%
	1 bed	11,620	57.4%	37.8%	4.2%	0.4%	0.2%	4.9%
	2 beds or more	13,202	36.3%	49.6%	12.6%	1.2%	0.4%	**14.1%**

Table 3 shows that there is a marked difference between the proportion of houses or bungalows, with two beds or more, in which 2 cars or more are owned (38%) when compared to that for flats, maisonettes or apartments (14%). This trend would likely be replicated in respect to the number of cars per household.

Tables 4 and 5 set out car ownership levels by accommodation type and size for the 'Southend Central Area' and 'Rest of the Borough'. They again confirm that the amount of cars per household are greater for the latter. In particular the proportion of houses or bungalows, with two beds or more, in which 2 cars or more are owned is 40% for the Rest of the Borough as compared to 25% for the Central Area. For flats the proportions are 16% and 11% respectively.

Table 4 Car Ownership Levels in 'Southend Central Area' by household type and size (2011 Census) - All occupied households (excluding caravans or other mobile or temporary structures)

		All Households	Households with no cars or vans	Households with one car or van	Own at least 2 cars or vans
Central Area	**Total**	**%**	**%**	**%**	**%**
All Accommodation	Total	15,247	46.0%	40.7%	13.3%
	1 bed	5,111	63.1%	32.7%	4.1%
	2 beds or more	10,136	37.3%	44.7%	**18.0%**
House or Bungalow	Total	5,230	32.5%	43.5%	24.0%
	1 bed	234	72.2%	22.2%	5.6%
	2 beds or more	4,996	30.6%	44.5%	**24.9%**
Flat, maisonette or apartment	Total	10,017	53.0%	39.2%	7.8%
	1 bed	4,877	62.7%	33.2%	4.1%
	2 beds or more	5,140	43.8%	44.9%	**11.2%**

Table 5 Car Ownership Levels in 'Rest of the Borough' by household type and size (2011 Census) - All occupied households (excluding caravans or other mobile or temporary structures)

		All Households	Households with no cars or vans	Households with one car or van	Own at least 2 cars or vans
Rest of Borough	**Total**	**%**	**%**	**%**	**%**
All Accommodation	Total	59,398	22.5%	45.5%	32.0%
	1 bed	7,949	51.7%	41.8%	6.5%
	2 beds or more	51,449	18.0%	46.1%	**35.9%**
House or Bungalow	Total	44,593	16.2%	44.9%	38.9%
	1 bed	1,206	41.6%	45.9%	24.9%
	2 beds or more	43,387	15.5%	44.9%	**39.6%**

Flat, maisonette or apartment	Total	14,805	41.5%	47.3%	11.2%
	1 bed	6,743	53.5%	41.0%	5.4%
	2 beds or more	8,062	31.5%	52.5%	**16.0%**

Section 2

Additional Parking Demand in excess of Parking Standard (1 Allocated Parking Space vs 2 Allocated Parking Spaces)

It is useful to gain an understanding of the amount of unmet parking demand based on the parking standard set by the DM DPD. This provides an estimate of the likely number of cars which will need to find alternative forms of unallocated parking and can be termed 'Additional Parking Demand'. The higher the Additional Parking Demand the greater the pressure on other forms of unallocated parking, such as on-street and other local parking capacity where it may exist, which in turn could lead to localised detrimental implications on the road network, the streetscene and community relations/ well-being.

When considering the impact of parking, the presence of households with no cars is important and must also be taken account of. If you assume that all car parking spaces are allocated then these parking spaces will in affect be 'lying empty' which is likely to increase the latent or Additional Parking Demand.

The DCLG Residential Parking Research (May 2007) suggests a methodology that can be used to calculate the amount of unmet parking demand assuming all parking spaces are allocated. In 2011, the profile of car ownership for all households in Southend was:

- 27.3% had no car
- 44.5 % had 1 car
- 22.2% had 2 cars
- 4.6% had 3 cars; and
- 1.4% had 4 cars or more

Assuming a one to one relationship between households and dwellings, this gives an overall demand of 1.09 car parking spaces per dwelling. This 'overall demand', however, affectively assumes that all the car parking spaces are unallocated (i.e. all spaces in the Borough are shared, which is unrealistic). Therefore hypothetically, if each dwelling were to be allocated one car parking space, which could not be used by any other household, then 27% of the allocated spaces would be unused (i.e. by households with no car). Also, there would be additional demand for parking spaces from households with two or more cars which would equate to:

ADDITIONAL DEMAND FOR PARKING PER DWELLING =

1 X (PROPORTION OF TWO CAR HOUSEHOLDS) +
2 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
3 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.22) + (2 x 0.046) + (3 x 0.014) = 0.35 cars per dwelling

In other words, by allocating 1.0 space per dwelling, there is still a demand for unallocated parking of an additional 0.35 spaces per dwelling. Therefore, 0.35 spaces per dwelling would have to rely upon on-street parking or other parking arrangements if they exist locally.

Estimating the Additional Parking Demand using the 2011 Census provides a sound basis for estimating the likely demand arising from new development in Borough. Clearly, a scenario where only 1 parking space is applied in all instances across the Borough is undesirable, given that this would result in an additional parking demand of 0.35 spaces per dwelling that would be reliant on unallocated parking.

Additional Parking Demand represents the likely amount of additional parking spaces required in excess of the level of allocated parking provided as part of a new development. This is synonymous with 'unallocated parking demand', the level of which can be measured as a surplus of allocating 1 or 2 parking spaces by area ('Central Area' and 'Rest of Borough'); household type; and household size. Tables 6 - 9 set out this information.

Table 6 suggests that setting a parking standard of 1 parking space per dwelling in the Central Area is likely to create additional parking demand of just 0.16. Therefore, for example, a development scheme comprising 30 dwelling units, which allocates 1 parking space per dwelling, is likely to be reliant on 4.8 (0.16 X 30) or 5 unallocated parking spaces. This would seem a manageable amount, particularly given the location of a number of 'off-street'/ 'pay and display' parking within the Central Area. However, using the same example for the 'Rest of the Borough', where additional parking demand is 0.41 per dwelling, leads to a much higher likely reliance on unallocated/ offsite spaces, with demand for an additional 12.3 or 13 parking spaces having to be accommodated in addition to the 30 spaces provided (1 allocated space per dwelling).

Table 6: Additional Unallocated Parking Demand by Area

	Additional unallocated car spaces required in excess of 1 parking space per dwelling	Additional unallocated car spaces required in excess of 2 parking space per dwelling
Southend	0.36[5]	0.07
Southend Central Area	0.16	0.03
Rest of Borough	0.41	0.09

**further examples of the additional parking demand calculation are provided in Appendix A of this statement*

It is evident that the additional parking demand arising from the allocation of 1 parking space per dwelling for the Central Area is similar to that created in the 'Rest of the Borough' when 2 spaces are allocated, 0.16 and 0.09 respectively (Table 6). Therefore the 'Central Area' and the 'Rest of the Borough' allocated locations would appear to be a good basis to differentiate between the parking standard set; 1 space per dwelling for the Central Area and 2 spaces per dwelling for the 'Rest of the

[5] This figure of 0.36 differs from the example provided on page 5 (0.35) due to the rounding of numbers in the calculation.

Borough, so that the potential for on-street parking and other forms of unallocated parking is less and therefore more manageable in the long term.

However, it is also important to understand the implications of different dwelling types and sizes and this is set out in Table 7.

Table 7 considers the level of 'Additional Parking Demand' or 'Additional Unallocated Car Spaces Required' in further detail for all of Southend. As indicated by the colour coding in Table 7, whereby the colour red highlights a high level of additional parking demand, compared to dark green which indicates a low level.

The level of additional parking demand, i.e. unallocated, generated as a result of allocating 1 space is relatively low for a 1 bedroom house or bungalow (0.13) and for all types of flats, maisonettes or apartments (1 bed flat = 0.06, 2 beds or more flat 0.16). However, the level of additional parking demand for a house or bungalow with 2 beds or more is 0.49, which is considered to be high and would most likely lead to localised parking pressures and associated detrimental impacts described herein. If 2 parking spaces were to be provided for this type of accommodation, the additional parking demand is reduced to 0.11, which is comparable to the level for other dwelling types where a parking standard of 1 space per dwelling is applied.

Table 7: Additional Unallocated Parking Demand by Household type and size (Southend-on-Sea)

		Additional unallocated car spaces required in excess of parking standard of 1 space per dwelling	Additional unallocated car spaces required in excess of paring standard 2 spaces per dwelling
Southend	**Total**	**Proportion**	**Proportion**
All Accommodation	Total	0.36	0.07
	1 bed	0.07	0.01
	2 beds or more	0.42	0.09
House or Bungalow	Total	0.48	0.10
	1 bed	0.13	0.02
	2 beds or more	0.49	0.11
Flat, maisonette or apartment	Total	0.11	0.01
	1 bed	0.06	0.01
	2 beds or more	0.16	0.02

**further examples of the additional parking demand calculation are provided in Appendix A of this statement, further detail on household size and car ownership is provided in Appendix B.*

Tables 8 and 9 set out the additional unallocated parking demand by household type and size for the Rest of the Borough and the Central Area. The split between houses and flats and 1 and 2 or more beds for the two areas is synonymous with the

suggested Vehicle Parking Standards as proposed by DM DPD (as amended). This is also outlined in Figure 1 set out in Section 3.

The proportion of additional parking demand generated as a result of allocating 1 space is relatively low for a 1 bedroom house or bungalow in both the Rest of the Borough and Central Area (0.14 and 0.07) and for all types of flats, maisonettes or apartments (1 bed flat = 0.06 and 0.05, 2 beds or more flat 0.18 and 0.13).

In comparison the level of additional parking demand for a house or bungalow with 2 beds or more in the Rest of the Borough is 0.51 (Table 8), which is considered to be high and would most likely lead to localised parking pressures and associated detrimental impacts described herein. If, however, 2 parking spaces were to be provided for this type of accommodation, the additional parking demand is reduced significantly to 0.11, which is comparable to the level for other dwelling types where a parking standard of 1 space per dwelling is applied. This demonstrates that there would be clear benefit in applying different standard for 2 or more bedroom houses and bungalows.

Table 8: Additional Unallocated Parking Demand by Household type and size (Rest of Borough)

		Additional unallocated car spaces required in excess of 1 parking space per dwelling	Additional unallocated car spaces required in excess of 2 parking space per dwelling
Rest of Borough	**Total**	**%**	**%**
All Accommodation	Total	0.41	0.09
	1 bed	0.08	0.01
	2 beds or more	0.46	0.10
House or Bungalow	Total	0.50	0.11
	1 bed	0.14	0.02
	2 beds or more	0.51	0.11
Flat, maisonette or apartment	Total	0.13	0.02
	1 bed	0.06	0.01
	2 beds or more	0.18	0.02

Table 9: Additional Unallocated Parking Demand by Household type and size (Central Area)

		Additional unallocated car spaces required in excess of 1 parking space per dwelling	Additional unallocated car spaces required in excess of 2 parking space per dwelling
Central Area	**Total**	**%**	**%**

All Accommodation	Total	0.16	0.03
	1 bed	0.05	0.01
	2 beds or more	0.21	0.04
House or Bungalow	Total	0.29	0.05
	1 bed	0.07	0.01
	2 beds or more	0.30	0.06
Flat, maisonette or apartment	Total	0.09	0.01
	1 bed	0.05	0.01
	2 beds or more	0.13	0.02

For the Central Area, the proportion of additional parking demand for a house or bungalow with 2 beds or more as a result of allocating 1 space is 0.3 (Table 9). Although this figure is higher than that for the equivalent accommodation types and sizes in the Central Area, it is not considered that additional parking associated with this dwelling type will not result in a significant impact on on-street parking. This is in part due to the lower levels of housing or bungalows being delivered in the Central Area, as past delivery has shown. Indeed, flatted development is often a more suitable and viable option for the type of sites available in these central urban locations.

Data collected for the Southend Annual Monitoring Report (2013) shows that of the 1368 dwellings delivered between 2001 -2013, in the Central Area (when taken as the Kursaal, Milton and Victoria Wards), 88% were flats and only 12% were houses. This compares to 56% and 44% for the Rest of the Borough respectively. This evidence suggests that there would be minimal impact on on-street parking from houses or bungalows that provide 1 parking space per dwelling within the Central Area as they only make up just over 10% of delivery (2001 – 2013).

In addition, where houses and bungalows are delivered in the Central Area, because of the size of potential sites available, these are more likely to be delivered at higher densities to assist with the viability of schemes. The type of dwellings delivered, therefore, are more likely be smaller in size for instance, 1 or 2 bedroom mews style houses, rather than larger 3 or 4 bedroom houses or bungalows which are more likely to have a greater impact on on-street parking as revealed in Tables 10 and 11.

Furthermore the Central Area, particularly the Town Centre at its core, is a highly sustainable area with good public transport options and services and facilities within easy walking distance. The existence of a number of 'off-street'/ 'pay and display' parking facilities in the Central Area also provides opportunities for overnight parking in particular, which is likely to reduce on-street parking stress by increasing capacity, particularly overnight.

Tables 10 and 11 set out the additional unallocated parking demand for a house or bungalow by size for the Rest of the Borough and the Central Area. The data shows that by differentiating between 1, 2, 3 and 4 bed or more accommodation there is a clear distinction between the amount of unallocated parking generated and, therefore, the likely impact on on-street parking. It demonstrates that 2 bedroom houses or bungalows in the Central Area are unlikely to have a significant impact on on-street parking under the policy set out in the Vehicle Parking Standards in the Development Management DPD.

Even so, it also reveals that there is an increasingly adverse impact if 3 or 4 bedroom or more houses or bungalows are developed, with the latter in fact having a similar impact on on-street parking to that of 2 bedroom or more houses or bungalows in the Rest of the Borough if only 1 parking space per dwelling was to be provided (Table 8).

As such the evidence suggests that there may have been scope for an additional standard within the Central Area to address the impact of developments where there is delivery of larger houses or bungalows (i.e. a 2 parking space standard for 3+ bedroom house or bungalow in the Central Area), even though the attractiveness or viability of this type of development is more limited in the Central Area based on past delivery.

Table 10: Additional Unallocated Parking Demand for a House or Bungalow by size, depicting 3 beds or more (Central Area)

		Additional unallocated car spaces required in excess of 1 parking space per dwelling	Additional unallocated car spaces required in excess of 2 parking space per dwelling
Central Area	**Total**	**%**	**%**
House or Bungalow	Total	0.29	0.05
	1 bed	0.07	0.01
	2 bed	0.16	0.01
	3 bed or more	0.34	0.07

Table 11: Additional Unallocated Parking Demand for a House or Bungalow by size, depicting 4 beds or more (Central Area)

		Additional unallocated car spaces required in excess of 1 parking space per dwelling	Additional unallocated car spaces required in excess of 2 parking space per dwelling
Central Area	**Total**	**%**	**%**
House or Bungalow	Total	0.29	0.05
	1 bed	0.07	0.01
	2 bed	0.16	0.01
	3 bed or more	0.28	0.04
	4 beds or more	0.47	0.11

Section 3

Summary

- Car ownership is higher in the Rest of the Borough (1.2 cars per household) than the Central Area (0.7);
- This trend would be expected to be repeated for 'houses and bungalows' when compared to that for 'flats, maisonettes and apartments';
- 28% of households in Southend own at least 2 cars. This rises to 32% for the 'Rest of The Borough' and falls to 13% for the 'Central Area'.
- The impact of not providing sufficient parking for these cars within development, particularly accounting for the cumulative impact of households that have 3, 4 or more cars, may lead to localised adverse impacts;
- The level of additional parking demand, i.e. unallocated, can be generated as a result of allocating 1 space or 2 spaces respectively, and provides a good indication of the likely cumulative impact associated with setting parking standards.
- Figure 1 below sets out the DM DPD proposed residential parking standards (as amended) and the associated additional parking demand these standards are likely to generate by area based on evidence from the 2011 Census.
- The additional parking demand generated is considered to be low for all but one of the dwelling types and sizes and parking standards outlined. The additional parking demand likely to be generated for a 2 bedroom or more house or bungalow in the Central Area, where 1 space is provided, is moderately high at 0.3.
- It is considered that the impact of the additional parking demand associated with only provide 1 parking space per a 2 bedroom or more house or bungalow in the Central Area will not result in significant detrimental impacts. This is due to:
    - the likely low level of delivery of this type accommodation in the central area;
    - the houses and bungalows that do come forward in the Central Area are likely to be smaller;
    - the availability of other forms of off street parking; and
    - The Central Area is a sustainable location with good public transport access and short walking distances to shops and services.

Figure 1: Development Management DPD Proposed Residential Parking Standards and associated Additional Parking Demand likely to be generated

Use Class	*Land Use*	*Southend Central Area*		*Rest of Borough*	
		Appropriate Standards	Additional Parking Demand	*Minimum Standard*	Additional Parking Demand
C3	1 Bedroom Dwelling	1 space per dwelling	0.05	1 space per dwelling	0.08

C3	2+ Bedroom Dwelling (flat)	1 space per dwelling	0.13	1 space per dwelling	0.18
C3	2+ Bedroom Dwelling (house)	1 space per dwelling	0.30	2 spaces per dwelling	0.11

Section 4

Conclusion

It is considered that the evidence demonstrates that the Parking Standards for the Central Area and Rest of the Borough are robust and justified and will deliver sustainable development. It is acknowledged that there is potential for some impact on on-street parking from new development in both areas of Southend, however, the figures reveal that these impacts are within acceptable levels according to the methodology applied to measure additional parking demand in excess of the number of parking standards provided.

The evidence also reveal some additional information about the impact of larger houses or bungalows in the Central Area i.e. 3 and 4 bedroom or more, and it does suggest that there may have been scope for a further standard to increase the effectiveness and robustness of the policy for this type of development. Nevertheless, the requirement for this potential additional standard is uncertain as the number of houses or bungalows developed in the Central Area, since adoption of the Core Strategy target, has been very low, only 12% of delivery; and it is considered that where they are delivered they are more likely to be smaller owing to matters of density and viability.

It is noted that the methodology for calculating 'additional parking demand' may be applied when assessing individual planning applications that deviate from the parking standards proposed by the DM DPD. This could be calculated per Ward area and be accompanied by other material considerations such as availability of on-street parking capacity.

Appendix A: Further examples of the calculations used to determine 'Additional Parking Demand' or 'Additional Unallocated Car Spaces Required'

i. The profile of car ownership for all households in the allocated Southend Central Area in 2011:

- 46.0% had no car
- 40.7 % had 1 car
- 11.2% had 2 cars
- 1.6% had 3 cars; and
- 0.5% had 4 cars or more

a) ADDITIONAL DEMAND FOR PARKING PER DWELLING (based on 1 allocated space per dwelling) **=**

1 X (PROPORTION OF TWO CAR HOUSEHOLDS) +
2 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
3 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.112) + (2 x 0.016) + (3 x 0.005) = **0.16 cars per dwelling**

b) ADDITIONAL DEMAND FOR PARKING PER DWELLING (based on 2 allocated spaces per dwelling) **=**

1 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
2 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.016) + (2 x 0.005) = **0.03 cars per dwelling**

ii. The profile of car ownership for all households in the allocated Rest of the Borough area in 2011:

- 22.5% had no car
- 45.5 % had 1 car
- 25.0% had 2 cars
- 5.3% had 3 cars; and
- 1.6% had 4 cars or more

a) ADDITIONAL DEMAND FOR PARKING PER DWELLING (based on 1 allocated space per dwelling) **=**

1 X (PROPORTION OF TWO CAR HOUSEHOLDS) +
2 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
3 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.25) + (2 x 0.053) + (3 x 0.016) = **0.40 cars per dwelling** (**0.41** when rounded is not taken into account)

b) ADDITIONAL DEMAND FOR PARKING PER DWELLING (based on 2 allocated spaces per dwelling) **=**

1 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
2 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.053) + (2 x 0.016) = **0.09 cars per dwelling**

iii. The profile of car ownership for households in 2 bedrooms or more, houses or bungalows, in 2011 for Southend-on-Sea:

- 17.0% had no car
- 44.9 % had 1 car
- 29.5% had 2 cars
- 6.6% had 3 cars; and
- 2.0% had 4 cars or more

a) ADDITIONAL DEMAND FOR PARKING PER DWELLING (based on 1 allocated space per dwelling) **=**

1 X (PROPORTION OF TWO CAR HOUSEHOLDS) +
2 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
3 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.295) + (2 x 0.066) + (3 x 0.02) = **0.49 cars per dwelling**

b) ADDITIONAL DEMAND FOR PARKING PER DWELLING (based on 2 allocated spaces per dwelling) **=**

1 X (PROPORTION OF THREE CAR HOUSEHOLDS) +
2 X (NO. OF FOUR CAR HOUSEHOLDS)

Which in this case would be:
Additional demand (unallocated parking demand) = (1 x 0.066) + (2 x 0.02) = **0.11 cars per dwelling**

Appendix B

All households (excluding caravans or other mobile or temporary structures); All households; Number of cars/vans in the area
Wards in Southend-on-Sea

	All households (excl. caravans/temporary structures)																							
	Total: Accom type (excl. caravans/ temporary structures)	1 bedroom						2 bedrooms						3 bedrooms						4 or more bedrooms					
		Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household
Southend-on-Sea	74,645	13,060	7,339	4,992	634	70	25	22,165	7,095	11,256	3,403	339	72	26,748	4,850	12,636	7,466	1,425	371	12,672	1,090	4,365	5,068	1,570	579
Belfairs	4,173	511	282	199	28	1	1	1,561	343	825	339	44	10	1,532	217	694	507	91	23	569	30	149	252	93	45
Blenheim Park	4,279	439	254	165	17	1	2	1,059	292	545	197	21	4	2,128	403	972	606	121	26	653	46	215	276	90	26
Chalkwell	4,367	1,125	592	464	58	7	4	1,360	413	725	201	16	5	670	111	351	181	22	5	1,212	69	460	492	143	48
Eastwood Park	3,981	216	116	88	10	2	0	1,276	309	655	272	33	7	1,758	165	766	624	154	49	731	24	213	327	115	52
Kursaal	5,085	1,702	1,063	566	67	5	1	1,782	768	816	182	15	1	1,074	304	499	238	28	5	527	139	215	128	34	11
Leigh	4,608	896	361	472	60	3	0	1,535	405	875	227	21	7	1,438	209	757	393	62	17	739	50	319	287	65	18
Milton	5,198	1,786	1,058	651	69	7	1	1,988	821	925	222	12	8	825	276	387	146	13	3	599	166	227	154	44	8
Prittlewell	4,208	570	339	194	32	4	1	1,076	345	557	156	15	3	1,837	289	864	549	108	27	725	51	236	286	107	45
Shoeburyness	4,759	953	501	383	62	6	1	1,346	352	705	257	29	3	1,838	295	901	511	108	23	622	45	191	252	102	32
Southchurch	4,065	415	287	112	15	1	0	1,120	379	552	169	19	1	1,557	292	717	437	90	21	973	80	330	401	123	39
St Laurence	4,205	481	250	193	31	6	1	1,292	327	658	271	34	2	1,948	273	867	623	130	55	484	35	152	201	71	25
St. Luke's	4,645	600	322	239	32	4	3	1,312	431	681	181	15	4	2,398	474	1,133	640	125	26	335	34	117	134	37	13
Thorpe	3,920	305	141	145	17	1	1	989	249	552	163	18	7	1,311	160	646	401	89	15	1,315	66	424	557	181	87
Victoria	4,964	1,623	1,106	455	47	11	4	1,584	761	670	137	12	4	1,457	472	682	246	41	16	300	75	113	77	25	10
West Leigh	3,840	278	109	149	16	4	0	938	211	550	161	16	0	1,436	149	687	499	75	26	1,188	47	397	558	131	55
West Shoebury	3,963	320	176	127	15	2	0	809	274	382	135	16	2	1,716	340	775	476	109	16	1,118	47	346	511	159	55
Westborough	4,385	840	382	390	58	5	5	1,138	415	583	133	3	4	1,825	421	938	389	59	18	582	86	261	175	50	10

	House or bungalow																							
	Total: Number of bedrooms	1 bedroom						2 bedrooms						3 bedrooms						4 or more bedrooms					
		Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household
Southend-on-Sea	49,823	1,440	671	605	142	21	1	10,848	2,915	5,603	2,055	233	42	25,126	4,346	11,829	7,202	1,392	357	12,409	984	4,280	5,023	1,550	572
Belfairs	3,533	124	54	58	12	0	0	1,325	295	688	290	43	9	1,515	214	684	503	91	23	569	30	149	252	93	45
Blenheim Park	3,635	96	48	41	6	0	1	786	217	392	158	15	4	2,102	399	958	602	118	25	651	46	214	276	90	25
Chalkwell	1,825	53	24	20	8	1	0	143	34	79	29	0	1	454	64	234	139	16	1	1,175	62	448	479	140	46
Eastwood Park	3,621	62	22	35	3	2	0	1,084	245	559	240	33	7	1,746	162	762	622	151	49	729	24	213	325	115	52
Kursaal	1,721	41	29	9	3	0	0	265	98	127	36	4	0	920	242	436	212	26	4	495	116	213	124	31	11
Leigh	2,506	64	18	36	10	0	0	458	116	259	74	6	3	1,269	177	667	353	58	14	715	46	307	280	65	17
Milton	1,338	103	71	25	6	1	0	256	112	107	33	3	1	458	142	211	94	9	2	521	124	200	150	40	7
Prittlewell	3,316	58	22	29	6	1	0	725	201	381	128	12	3	1,814	281	857	543	106	27	719	50	232	285	107	45
Shoeburyness	3,703	222	74	115	28	5	0	1,041	267	542	207	22	3	1,821	288	893	509	108	23	619	44	190	252	101	32
Southchurch	3,387	104	62	36	5	1	0	787	222	414	132	18	1	1,533	283	707	433	89	21	963	73	327	401	123	39
St Laurence	3,647	126	41	59	23	3	0	1,114	258	575	250	30	1	1,925	266	856	620	129	54	482	34	152	200	71	25
St. Luke's	3,601	113	61	41	10	1	0	802	236	427	123	13	3	2,355	462	1,108	634	125	26	331	31	116	134	37	13
Thorpe	3,025	29	10	15	3	1	0	449	91	254	91	12	1	1,243	148	607	386	88	14	1,304	63	420	555	179	87
Victoria	2,171	90	69	18	1	2	0	441	189	193	55	3	1	1,358	439	629	235	39	16	282	68	108	76	21	9
West Leigh	2,996	23	8	9	6	0	0	421	99	239	77	6	0	1,371	135	647	489	74	26	1,181	47	394	556	129	55
West Shoebury	3,249	67	29	31	5	2	0	492	134	241	102	13	2	1,576	270	726	459	106	15	1,114	45	346	509	159	55
Westborough	2,549	65	29	28	7	1	0	259	101	126	30	0	2	1,666	374	847	369	59	17	559	81	251	169	49	9

	A flat; maisonette; apartment																								
	Total: Number of bedrooms	1 bedroom						2 bedrooms						3 bedrooms						4 or more bedrooms						Number of cars/vans in the area
		Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	Total	No cars or vans in household	1 car or van in household	2 cars or vans in household	3 cars or vans in household	4 or more cars or vans in household	
Southend-on-Sea	24,822	11,620	6,668	4,387	492	49	24	11,317	4,180	5,653	1,348	106	30	1,622	504	807	264	33	14	263	106	85	45	20	7	81,304
Belfairs	640	387	228	141	16	1	1	236	48	137	49	1	1	17	3	10	4	0	0	0	0	0	0	0	0	5,160
Blenheim Park	644	343	206	124	11	1	1	273	75	153	39	6	0	26	4	14	4	3	1	2	0	1	0	0	1	5,052
Chalkwell	2,542	1,072	568	444	50	6	4	1,217	379	646	172	16	4	216	47	117	42	6	4	37	7	12	13	3	2	4,704
Eastwood Park	360	154	94	53	7	0	0	192	64	96	32	0	0	12	3	4	2	3	0	2	0	0	2	0	0	5,564
Kursaal	3,364	1,661	1,034	557	64	5	1	1,517	670	689	146	11	1	154	62	63	26	2	1	32	23	2	4	3	0	3,651
Leigh	2,102	832	343	436	50	3	0	1,077	289	616	153	15	4	169	32	90	40	4	3	24	4	12	7	0	1	4,991
Milton	3,860	1,683	987	626	63	6	1	1,732	709	818	189	9	7	367	134	176	52	4	1	78	42	27	4	4	1	3,689
Prittlewell	892	512	317	165	26	3	1	351	144	176	28	3	0	23	8	7	6	2	0	6	1	4	1	0	0	4,941
Shoeburyness	1,056	731	427	268	34	1	1	305	85	163	50	7	0	17	7	8	2	0	0	3	1	1	0	1	0	5,358
Southchurch	678	311	225	76	10	0	0	333	157	138	37	1	0	24	9	10	4	1	0	10	7	3	0	0	0	4,733
St Laurence	558	355	209	134	8	3	1	178	69	83	21	4	1	23	7	11	3	1	1	2	1	0	1	0	0	5,231
St. Luke's	1,044	487	261	198	22	3	3	510	195	254	58	2	1	43	12	25	6	0	0	4	3	1	0	0	0	4,897
Thorpe	895	276	131	130	14	0	1	540	158	298	72	6	6	68	12	39	15	1	1	11	3	4	2	2	0	5,405
Victoria	2,793	1,533	1,037	437	46	9	4	1,143	572	477	82	9	3	99	33	53	11	2	0	18	7	5	1	4	1	3,367
West Leigh	844	255	101	140	10	4	0	517	112	311	84	10	0	65	14	40	10	1	0	7	0	3	2	2	0	5,276
West Shoebury	714	253	147	96	10	0	0	317	140	141	33	3	0	140	70	49	17	3	1	4	2	0	2	0	0	5,093
Westborough	1,836	775	353	362	51	4	5	879	314	457	103	3	2	159	47	91	20	0	1	23	5	10	6	1	1	4,192