

APPENDIX 1 - METHODOLOGY, DATA SOURCES AND ASSUMPTIONS

Objectives

- A1.1 A key objective of this study is to utilise the most recent and robust sources of data and estimate the need for additional retail floorspace within the GDA through to 2016. The quantitative assessment has been undertaken for each of the two main categories of retailing – convenience goods and comparison goods.
- A1.2 Although the assessment is necessarily detailed and relatively complex, transparency has been sought in all the calculations. A traditional approach to estimating quantitative retail need has been adopted and the very latest published data, including a specially commissioned report by Experian on consumer retail expenditure and a range of consumer surveys has been incorporated. This should ensure that the assessment is up to date, comprehensive and robust.
- A1.3 This chapter sets out in more detail the methodology employed, summarises the role of the household telephone survey and (for convenience) sets out in one place the main assumptions and definitions which have been used and the principal sources of data..

Quantitative Need Methodology

- A1.4 The quantitative need for additional retail floorspace within an area (or region) is dependent on the future relationship between the demand for and supply of space, ideally after taking into account the extent (if any) of any over/under trading that is occurring at the base year. The demand for floorspace is then determined by assessing the likely growth in the volume of consumer retail expenditure, while an assessment of floorspace supply involves quantifying the extent to which proposed changes in the location, quality and quantity of retail floorspace will meet the forecast increases in expenditure. Any monetary shortfall of supply relative to demand in the future indicates there is a need for more floorspace in quantitative terms. The scale of additional retail provision is

then determined by converting any excess of consumer expenditure (or headroom expenditure) into a retail floorspace need by applying appropriate sales densities. In practice, because shopping patterns are complex and vary for different types of goods, the methodology utilises survey data to determine base year shopping patterns.

A1.5 The methodology for estimating quantitative need may be summarised as follows:-

Step 1: Catchment Area Definition- The catchment area should be defined with regard to the study objective. For this study it includes all of the GDA and its wider shopping hinterland.

Step 2: Calculate Total Available Expenditure in the Survey Area- using information from expenditure per head and population growth estimates broken into the 28 zone areas, and adjusted to take account of special forms of trading.

Step 3: Application of "Market Shares" to Determine Amount of Retained Expenditure- using results of the three shopping surveys, future population growth patterns, extent of catchment areas and assessing the distribution and volume of locally available consumer expenditure and balancing it against retail turnover estimates. This should include resident population, but also any in-flow retail expenditure from people living outside the catchment area. The main types of inflow expenditure come from long distance shoppers and tourists.

Step 4: Determine Whether the Existing Retail Economy is Trading at Equilibrium- At this stage, the adequacy of the existing retail provision within the GDA in quantitative terms is assessed. For example, if actual turnovers assessed exceed the benchmark turnovers, it could be argued that the floorspace is over-trading and, therefore, there may be an existing need for additional retail floorspace. Alternatively, if actual turnovers are less than benchmark levels then the floorspace may be assumed to be under-trading, signalling a potential over-supply of existing retail floorspace.

Step 5: Calculate Growth in Retained Expenditure through to the Forecast Years- Having determined the base year (2007) “market shares” and levels of retained comparison goods expenditure within the GDA as a whole and its constituent Council areas, the principle of market shares is used to calculate how much more spending or trade the GDA could expect to attract in the future as a result of the forecast growth in available catchment area expenditure.

Step 6: Determine Level of Potential Headroom Expenditure in the Forecast Year- Not all of the increase in turnover potential within the GDA (and its Council areas) is available by the forecast year to support additional comparison goods shopping. In this stage account is taken of the reduction in some of the forecast growth in expenditure as it is allocated to existing retailers as they increase their sales productivities in real terms over time.

Step 7: Determine Level of Residual Headroom Expenditure in the Forecast Year- this stage adjusts the potential headroom expenditures calculated for 2016 by taking into account the extent (if any) of any over or under-trading that is occurring at the base year (2007).

Step 8: Estimate Capacity for Additional Retail Floorspace at the Forecast Years- the adjusted headroom expenditures are converted into retail floorspace requirements for the GDA and for each Council area.

Step 9: Allow for Retail Services- 20% is added to the retail floorspace requirements to reflect the high level of units which, when built, will be taken up by non retail uses- units such as hairdressers, bookmakers, coffee shops for example.

The Household Telephone Survey

Objectives of the Survey

A1.11 The household survey forms an important role in the quantitative need assessment since it provides important information on the current pattern of shopping activity throughout the GDA and its shopping hinterland. As such, it forms the foundation upon which the retail need estimates are built.

A1.12 A major aim of the survey is to generate quantitative data on consumer retail expenditure flows between areas or zones (where people live) and retail centres (where they spend their money). This has been carried out for the following three types of shopping:-

- convenience goods
- non-bulky comparison goods
- bulky comparison goods

(although in our quantitative need assessment the latter two categories have been amalgamated).

Definition of the Survey Area

A1.13 The outer boundary of the household survey area was agreed with the Councils. It is relatively extensive and includes 10 counties outside of the GDA. It has been drawn to encompass the shopping catchment areas of Dublin City Centre and other main towns within the GDA.

Definition of the Expenditure Zones

A1.14 For the purpose of sampling and analysis, the survey area has been divided into 28 zones (Figure 1.A). These zones are defined on the basis of DED boundaries and each zone comprises one or more ED's (formerly DED's). Furthermore, the amalgamation of one or more zones defines a county. Thus, the hierarchy of geographies used in the survey is consistent with administrative boundaries at the county and regional level. The number and geographical definition of zones was agreed with the Councils prior to the commencement of the survey.

A1.15 In broad terms the zones relate to natural shopping activity areas on the ground and to the size and distribution of retail centres. There are relatively more zones covering the Dublin Region than the Mid East, because Dublin has the largest population and the more developed and complex pattern of retail offer. The zones for the GDA shopping hinterland are even larger because the focus is on estimating the inflow of spend into the GDA rather than to generate a detailed understanding of shopper behaviour locally.

A1.16 The general configuration of the 28 zones and how each relates to the administrative structure of the GDA and its shopping hinterland, is shown in **Figures 1.A and 1.B** overleaf.

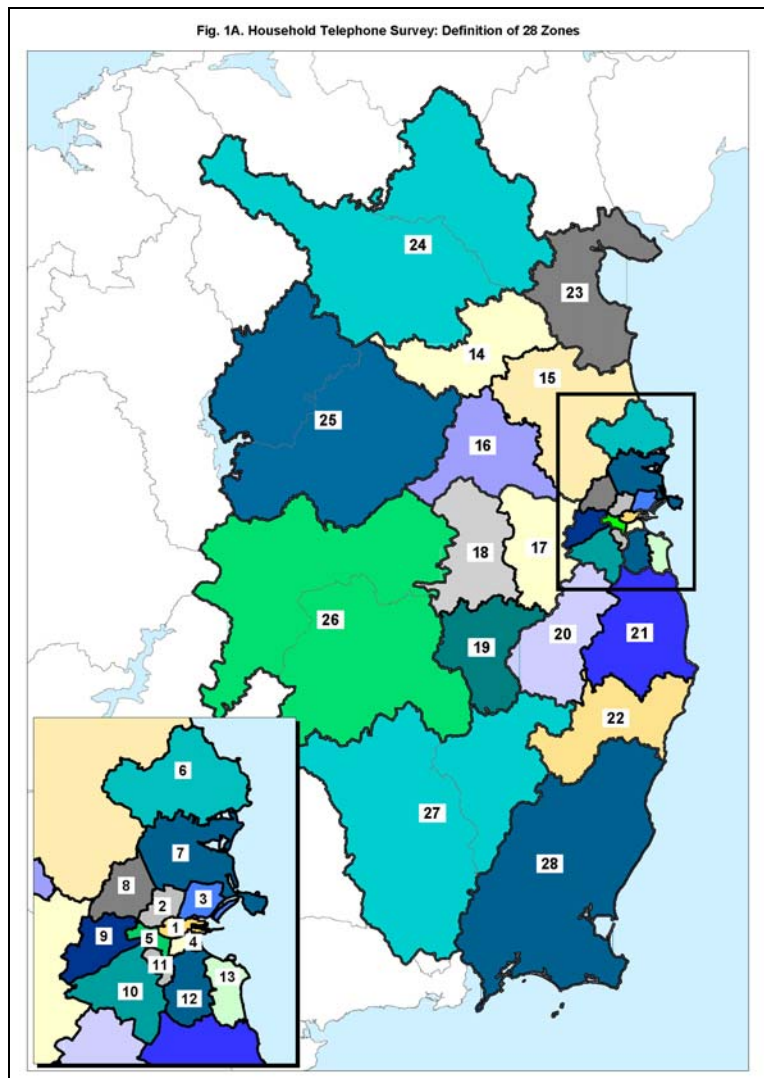


Figure 1A: Definition of the 28 Zones

Fig. 1B

DIAGRAM SUMMARISING THE SPATIAL RELATIONSHIP BETWEEN THE HOUSEHOLD SURVEY AREA, GDA, REGIONS, CONSTITUENT COUNTIES AND HOUSEHOLD SURVEY ZONES

Entire Survey Area	GDA Household Survey Area												
GDA/GDA Hinterland	GDA						GDA Hinterland						
Region	Dublin				Mid East				Other Regions of Republic of Ireland				
County	Dublin City	Fingal	South Dublin	DLR	Meath	Kildare	Wicklow	Leath	Cavan & Monaghan	Louth & West Meath	Offaly & Louth	Carlow & Kilkenny	Westford
Zone(s)	1,2,3,4 and 5	6, 7 and 8	9,10 and 11	12 and 13	14, 15 and 16	17, 18 and 19	20, 21 and 22	23	24	25	26	27	28

Figure 1.B: Spatial Relationship Between Zones, Counties and Regions

The Survey Questionnaire

A1.17 The survey questionnaire was drafted in consultation with the Councils and their agreement was obtained prior to the commencement of interviewing. A copy of the questionnaire is reproduced in **Appendix 3b**. Fieldwork for the household survey was carried out between 16 October and 4 December, 2007.

The Young Persons Street Survey

A1.18 In the preparation for the telephone survey of residents within the GDA and its shopping hinterland it was considered that it was possible that the telephone survey could generate a sample with a material under-representation of young people (i.e. those aged between 16 and 34 years of age), because respondents in this age group are less likely to be at home and/or have a landline telephone. This was considered to be particularly problematic in areas of Dublin City, where the age profile is skewed significantly towards the young.

A1.19 For this reason, it was agreed that the household telephone survey would be supplemented by an additional survey of 750 people aged between 16 and 34 years. These interviews were carried out face to face on the street in Dublin City Centre (500 interviews) and at Dundrum Town Centre (250 interviews). The questionnaire was (virtually) identical to that used for the household telephone survey. It is reproduced in **Appendix 3c**.

A1.20 The responses to the young persons survey were then **added** to those of the main telephone survey according to the zone in which the respondent lived. This ensures that the amalgamated or total sample of households reflects the actual age profile of the survey area as a whole. **Table A1.1** confirms that the match is very close.

Table A1.1 Actual vs Household Survey Age Profiles

Age Group (Years)	Actual¹ (Col %)	Colliers CRE² (Col %)
15-34	40.1	41.3
35-54	33.9	33.5
55+	25.9	25.3
Total	100.0	100.0

¹ 2006 Census (excludes residents aged 14 years or less)

² Household survey – results summarised in full in **Appendix 3d**.

Sampling

A1.21 For the GDA household survey, structured interviews were carried out with the person responsible for the main shop in a total of 5,750 households (including the Young Persons survey) to ascertain their actual shopping patterns and their views. The survey was structured so that a minimum of 200 interviews took place with persons living in each zone within the GDA. At the analysis stage of the survey, the individual samples are then “weighted” to their appropriate representation within the survey population to produce an overall result which is representative of the survey area as a whole. Without the weighting, the less densely populated zones would have a disproportionately large effect on the overall survey results, contrary to their population size. The whole principle of weighting therefore allows the characteristics of less densely populated zones to be represented without the unnecessary cost of a grossly inflated sample. **Appendix 3a** provides a more detailed statistical synopsis of the sampling methodology and the degree of confidence which can be attributed to the results.

Survey Analysis and Results

A1.23 In so far as the survey results are used to inform the assessment of retail need within the GDA, the principal data which the survey generates is the percentage market share (in terms of expenditure) of towns and other centres within the Greater Dublin Area. This is analysed separately for convenience goods and comparison goods shopping. Using this quantitative information, it is possible to build-up a detailed picture of existing shopper behaviour within the GDA. In particular, the data allows the existing catchment areas and retail turnovers of the constituent Council areas and main centres to be determined. **Appendix 3d** sets out the key results of the household survey, whilst **Appendix 3e** provides full details of the expenditure market shares produced by the survey for each retail centre and zone, and for each category of goods. The survey forms the foundation for the retail floorspace need assessment and the policy direction of the Strategy.

Principal Data Sources

A1.24 The quantitative retail need assessment utilises five major sources of data. All of the sources are **new** to this study. The data sources are as follows:-

Data on shopping trips patterns and consumer retail expenditure flows

Source: The results of a new household survey of the GDA and its shopping hinterland carried out during October/November, 2007 have been used. The survey has been described at paragraphs A1.11 to A1.23 above.

Data on population and population projections

Source: For the 28 zones which constitute the survey area, population figures for 2006 have been sourced from the 2006 Census and are built-up using populations at ED level. Population projections have been supplied by, and

are consistent with the Regional Planning Guidelines adopted projections as revised in April 2007.

Data on consumer retail expenditure per head

Source: Data on average convenience goods and comparison goods expenditure per head for 2006 has been obtained from Experian for the resident populations living within each of the 28 zones that constitute our household survey area. The expenditure per head data is set out in Appendix 5.

Data on existing retail floorspace

Source: Existing retail floorspace stock totals by region and county, and disaggregated into convenience goods, non-bulky comparison goods and bulky comparison goods, have been estimated by updating baseline retail floorspace stock figures from the 2001 Retail Strategy¹ by adding to the 2001 totals any major retail floorspace completions through to September 2007 (information supplied by the seven Councils within the GDA).²

The present retail (September 2007) floorspace stock estimates are set out in full in **Appendix 6b**.

Data on retail commitments

Source Based on information supplied by the seven Councils, comprehensive schedules of retail floorspace in the development pipeline throughout the GDA have been prepared. The floorspace data is disaggregated by region and Council area and is

¹ DTZ Pineda Consulting, GDA Retail Planning Strategy, November 2001, Working Paper 4.

² In practice, the Councils only supplied details of their larger completed retail developments.

presented separately for convenience goods, non-bulky comparison goods and bulky comparison goods. To ensure consistency across the GDA (and because every study has to adopt a time cut-off) only those retail schemes under construction or with planning consent (but not yet open for trading) as at September 2007 are included. A schedule providing full details of the retail development pipeline is reproduced in **Appendix 6b**.

Interpretation and Definition

A1.25 In addition to the principal sources of data, there are a number of further definitions, assumptions and forecasts which have been adopted throughout this study. These are as follows:-

Composition of Main Retail Goods Categories

A1.27 In this study separate quantitative need assessments for convenience goods and comparison goods floorspace have been carried out.¹

Base Year

A1.28 A base year of 2007 has been adopted.

Forecast Year(s)

A1.29 The quantitative retail need is forecast at 2016. Whilst 2011 was initially proposed due to the short time from publication of the Strategy and the date it was considered to be of little benefit.

Price Base

A1.30 All monetary figures in this report are given in **constant 2006 prices**. This is the price base for the consumer expenditure per head data obtained from Experian.

Future Growth in Consumer Retail Expenditure Per Head

A1.31 Future spending levels have an important bearing on the need for additional retail floorspace. The expenditure growth rates used are therefore critical to the validity

¹ The individual type of goods which define each broad category are set in **Appendix 6a**.

of the overall quantitative need assessment and it is vital that up to date, realistic and robust sources are used.

A1.32 This assessment uses 2006 based expenditure forecasts produced by Experian specifically for this study. The full Experian report, which explains the forecasting methodology, provides comparisons with the UK and presents full details of the expenditure forecasts, is reproduced in **Appendix 5**. Experian has generated annual forecasts of changes in consumer retail expenditure per head from 2006 through to 2016. Separate forecasts have been produced for:-

- Convenience goods
- Non-bulky comparison goods
- Bulky comparison goods

and for the following two regions

- Dublin
- the Mid East

A1.33 Experian's expenditure forecasts are estimates of future spending based on an economic model of disaggregated consumer spending. They differ from expenditure projections that are estimates of future spending based on the extrapolation of past trends. Experian advises that when carrying out longer term retail need assessments, the use of forecasts is preferred to projections, since they incorporate the strong likelihood of changing spending patterns amongst consumers over the coming years in a way projections can not.

A1.34 Following the advice of Experian, it is its expenditure forecasts which have been adopted in this study. These are summarised in **Table A1.2**.

Table A1.2: Expenditure Per Head Growth Forecasts, 2007-2016

Average Annual Growth in Spending Per head (% Constant Prices)			
Goods Category	Dublin Region	Mid East Region	Republic of Ireland
Convenience Goods	1.1	0.9	0.8
Comparison Goods	4.8	4.5	4.4
All Retail Goods	3.3	3.0	2.9

Source: Experian (full details are set out in **Appendix 5**)

In- Flow Expenditure

A1.35 In-flow expenditure into the GDA originates from the two principal sources:-

- Irish residents living outside the GDA;
- Domestic and overseas visitors/tourists staying in the GDA.

A1.36 By extending the household survey area to well beyond the GDA itself (see **Figure 5.1**), the objective is to capture virtually all day trips made into the GDA for shopping purpose by Irish residents. However, this survey does not provide any information on spend generated by visitors/tourists, which in the case of Dublin makes a significant contribution to the city's retail economy. To compensate for this a separate street questionnaire survey of 500 visitors/tourists within Dublin City Centre was undertaken, which is the location that is likely to attract the vast majority of visitor/tourist expenditure on shopping.

A1.37 The visitor/tourist survey questionnaire and main results are presented in **Appendices 4a** and **4b**, whilst **Appendix 4c** sets out the methodology of using the survey results in combination with data published by Failte Ireland and the Dublin Institute of Technology (DIT), to estimate current and projected annual levels of visitor/tourist retail expenditure in Dublin. In practice, the majority of spend is on comparison goods shopping and benefits the retail economy of Dublin City Centre. The quantum of retail spend generated each year by

visitors/tourists is net additional to that produced by residents within our household survey area. Therefore, the estimate of the annual retail turnover of Dublin City Centre is derived by adding together the shopping expenditures of residents (household survey) and visitors/tourists (tourist survey).

Special Forms of Trading and E-tailing

- A1.38 It is normal practice in the preparation of quantitative retail need studies to make deductions from the consumer retail expenditure per person figures adopted to allow for expenditure by 'special forms of trading' (SFT). This is retail expenditure that does not take place in shops, such as that via mail order houses, door to door salesmen and stalls and markets. It also includes spending using digital TV and over the internet.
- A1.39 Recent evidence within the UK suggests that e-tailing sales are increasing as a proportion of total retail expenditure, although perhaps not at the rate many commentators forecast at the height of the dot.com boom some years ago. Much of the initial growth in e-tailing has been achieved through the cannibalisation of existing retail expenditure on traditional catalogue-based mail order. However, this cannot continue, so any further gains in e-tailing will directly feed through into an increase in retail sales through SFT. Accordingly, it is felt prudent to take this into account in the quantitative need assessment.
- A1.40 In preparing this study, a range of published material on the subject of e-tailing has been examined. However, there do not appear to be any robust estimates of the relative share of store and non-store sales in the Republic of Ireland. Therefore the assumptions and forecasts prepared by Experian for the UK retail market are adopted. These are summarised in **Table A1.3** and presented in full in the Experian retail expenditure report in **Appendix 5**.

Table A1.3: Special Forms of Trading: Market Share Assumptions

Year	Convenience Goods (%)	Comparison Goods (%)
2006	3.6	8.8
2007	4.8	11.0
2016	7.3	14.4
Source: Experian report (Appendix 5) and Experian Retail Planner Briefing, Note 5.1, Table 5.1		

A1.41 It must be stressed that the Experian projections are only estimates, since it is very difficult to predict precisely what will happen, particularly over a long time frame. Obviously, if the actual growth in SFT is higher than that which has been assumed, then the estimates of additional retail floorspace need within the GDA calculated in this study will be too high.

Disaggregation of Consumer Retail Expenditure Between Non-Bulky and Bulky Comparison Goods Spending

A1.42 Prior to combining the two main goods categories, separate base year quantitative assessments for non-bulky and bulky comparison goods are carried out. Therefore, available consumer retail expenditure on comparison goods must be disaggregated between the two categories. For this study, Experian has produced estimates of average spend per head in 2006 for non-bulky and bulky comparison goods for each zone.

Turnover Allocation for Existing Retail Floorspace

A1.43 It would be wrong to assume that all of the increase in retail expenditure within the GDA is available to support additional retail floorspace. This is because it is appropriate that some of the forecast growth in expenditure should be allocated to existing retailers because the evidence confirms that existing retail shops, in fact, achieve real, and necessary, gains in sales productivities year on year. Rising sales densities are driven by a number of factors including growth in floorspace efficiency and changes in trading hours, net to gross ratios and the mix of goods. Rapidly rising costs also mean existing retailers must grow their sales densities in real terms to remain viable.

A1.44 Consequently, to avoid making a turnover allowance for existing retailers would lead to a “double-counting” of future available retail expenditure and thus an

over-estimation of the need for additional retail floorspace (i.e. the consumer spend soaked-up by existing retail floorspace would be used to justify the need for more retail floorspace).

A1.45 Experian has recently published a Briefing Note for the UK retail market¹ on estimating and projecting store sales densities. This paper sets out its new research on the subject and its relevance to quantitative retail floorspace need assessments.

A1.46 In the background paper prepared for this Strategy (reproduced in **Appendix 5**), research undertaken on this issue was examined by specialist consultants. Due to the unavailability of data on changes in sales densities over time in the State, advice was sought on assumptions to be made on future sales density growth; drawing from the experience in the UK. The figures recommended in this background research paper are “..a central projection of 2.2% and 0.6% per cent a year for comparison and convenience space respectively with a high case projection for 2.8% and 0.8% and a low case projection of 1.5% and 0.25% (for comparison and convenience space respectively).”

A1.47 In carrying out the surveys, consultations, site visits and other work that in developing the revised Strategy has shown that, in overall terms, there is scope to further improve the quality of the retail offer across the GDA as a whole. These qualitative improvements have been referred to in Chapter 4, and the revised Retail Strategy seeks to encourage and facilitate an increase in retail quality. To reflect these policy aims, it is considered that adopting figures within the lower range of store productivity growth rate of the range estimated by Experian for the UK retail market is more appropriate for the GDA for the time period through to 2016, even though this may mean the loss of some existing out-dated retail floorspace as new shopping development proceeds. The study therefore adopts the following annual growth rates:-

- *Convenience Goods* - 0.50% pa
- *Comparison goods* - 1.75% pa

¹ Experian Retail Planner Briefing Note 5.1, November 2007.

Forecast Sales Densities

A1.48 Sales density measures the relative efficiency with which floorspace is used by retailers to convert sales floorspace into retail turnover. Retailers selling high value goods from a relatively small unit generally achieve much higher sales densities than retailers such as DIY or bulky furniture operators selling lower value products from a large store.

A1.49 Forecast sales densities are used at two stages in the quantitative floorspace need assessment:-

- to estimate the turnover of retail commitments;
- to convert the available residual headroom expenditure at each of the forecast years into a need (or requirement) for additional retail floorspace.

A1.50 In considering what are the most important sales densities to use it is necessary to bear in mind the following:-

- that sales densities relating to new retail stores or schemes (which will open in the future) are likely to be higher than those which apply to all of the existing retail floorspace stock in a centre at the base year (2007);
- that sales densities vary widely between different goods categories being generally higher for convenience goods floorspace;
- that sales densities for both convenience goods and comparison goods will increase over time due to the real increases in store productivity which apply to all retail floorspace (see paragraph A1.47).

A1.51 It is therefore necessary to adopt a range of sales densities in order to account for the variability in retail productivity across the principal goods categories and over time. In selecting what are considered to be realistic sales densities, regard has been had to the general characteristics of the GDA retail economy, the relative trading performance of its retail centres, published data on store productivities of major retailers in Ireland and the sales density levels adopted in the 2001 Strategy. The assumed sales densities for retail commitments are set out in Table A1.4 below.

Table A1.4 Assumed Forecast Sales Densities (€ psm net)

Goods Category	Base Year 2007	Forecast Year 2016¹
Non-Bulky Comparison Goods	8,000	9,352
Bulky Comparison Goods	5,000	5,845
Convenience Goods	12,000	12,551

¹The sales densities are higher at 2016 because they include appropriate real increases in store productivities.

A1.52 To convert available headroom expenditure within the convenience goods sector into a retail floorspace requirement, an average across the board sales density equivalent to €12,000 per square metre net at the base year of 2007 has been assumed. This is representative of the food store sector as a whole. For the comparison goods sector as a whole, an average across the board sales density equivalent to €7,000 per square metre net at base year of 2007¹ has been adopted. This reflects a mix of non-bulky and bulky comparison goods.

Net to Gross Ratios

A1.53 Where actual gross and net floorspace figures have been supplied by the Councils these have been used. However, where such figures are not available, a range of net to gross ratios have been adopted as follows.²

Convenience goods	66:100
Non-bulky comparison goods	66:100
Bulky comparison goods	90:100

Metric Conversion

A1.54 Where necessary, square feet has been converted into metres (and vice versa) using the following formulae:

$$1 \text{ sq m} = 10.764 \text{ sq ft}$$

$$1 \text{ sq ft} = 0.093 \text{ sq m}$$

¹ This equates to €7,503 psm net at 2011 and €8,183 psm net at 2016.

² Further details are given in the estimating retail floorspace methodology paper at **Appendix 6a**.

VAT

A1.55 Expenditure and sales/turnover data used throughout the quantitative need assessment includes VAT.