

***ECONOMIC SUSTAINABILITY ASSESSMENT
FOR THE PROPOSED STORE***

*PREPARED FOR
SAVE COFFERIDGE CLOSE
BY
EDWARD HUDSON*



This Assessment has been independently reviewed by

Dr David Rogers,

*Co-Director of the Retail Location Analysis programme at the Institute of Retail Management
in the Saïd Business School at the University of Oxford.*

He was formerly Head of Site Potential Statistics for J. Sainsbury PLC.

He considers that "the conclusions are probably correct." His review is presented on page 3.

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The author of this Assessment has some 30 years' international experience in economics. He was for twelve years the executive head of a United Nations regional body responsible for co-ordinating transport policy among European governments. Before recruitment to the international civil service, his background includes an Oxford degree and seven years' post-graduate training in France in multi-modal transport analysis and market research. He lives in Stony Stratford.

The assistance of Angela and Terry Cook in researching the supermarket operational data used in this Assessment is gratefully acknowledged.

Executive summary

- This Assessment looks at whether a food store of the size proposed for Cofferridge Close would be economically sustainable and whether there is sufficient local need for it.
- More precisely, the Assessment seeks to establish:
 - whether the proposal constitutes sustainable economic development as sought by the National Planning Policy Framework (NPPF);
 - whether there is local need for a store of the size proposed, in accordance with the recommendation of Milton Keynes Council's Retail Capacity Update (2011) that each application for further convenience floorspace should now be assessed on the basis of demonstrated local need; and
 - whether, as a major retail development within an existing centre, the proposed store would be of an appropriate scale, as required by Local Plan Policy R1(iii).
- The Assessment's main conclusion is that there is no local need for a store of the size proposed on this site. Demand is inadequate to sustain a store of this size because:
 - the demographics of the catchment area are too weak;
 - the competition from nearby rival supermarkets is too strong; and
 - for motorists, access to the site is too slow and awkward.
- More specifically, such a store's market share would be limited:
 - in the urbanised area east of Stony Stratford and even within the town itself by the approved enlargement of the already-dominant Tesco store at Wolverton;
 - to the south-east by the building of the Western Expansion Area supermarket, whose approved convenience-goods size has recently been doubled; and
 - in the sparsely populated rural hinterland north, west and south of Stony Stratford, by competition from existing Tesco and Waitrose stores at Buckingham and Towcester.
- The Cofferridge Close site itself is handicapped by the fact that it can be accessed by cars only via a series of unclassified streets and junctions in a built-up area. This places it at a permanent competitive disadvantage to rival store sites with rapid access along the Milton Keynes grid-road system. It is further penalised by the fact that —unlike its nearest giant rivals— it cannot offer a petrol filling station.



- If approved and built, such a store would be out of scale with demand to such an extent that it would not be viable. Its turnover would fall at least 37% and possibly as much as 67% short of the benchmark level of the leading food supermarkets.
- The Application fails therefore to present the sustainable development sought by the NPPF. The proposed store does not correspond to a localised need as required by local planning policy, and is out of scale with its catchment area. Its predictable failure would have significant adverse impact on the vitality of a town centre. The Application must accordingly be refused under NPPF paragraphs 12 and 27 and Local Plan Policy R1 (iii).
- These conclusions are based on a realistic evaluation by gravity model¹ of the store's foreseeable share of the total "pot" of convenience-goods spending available in its catchment area. The evaluation is firmly based on official population forecasts, real store sizes, real travelling-times by car and by bus and the latest professional convenience-goods spending forecasts for the catchment area. The car-owning and non-car-owning segments of the market have been analysed separately, and the results aggregated. Viability has been assessed using the latest real industry benchmarks.
- On the other hand, using the same model to simulate the consequences of leaving the Cofferridge Close store unchanged shows that it would then decline appreciably under pressure of increased competition from the enlarged Tesco Wolverton and the planned Western Expansion Area supermarket.
- Further simulations with the model suggest that a modest expansion of the existing store by some 20% or 30% offers prospects of long-term viability. This would be a proportionate response to increased competition from nearby giant rivals, helping to ensure the store's future and also to retain trade in Stony Stratford for the town's other businesses.
- This would be far preferable to the hazardous disproportionate increase in the store's size sought by the present application. The store's predictable failure would leave Stony Stratford with a "white elephant" in the heart of its Conservation Area and without any mainstream food retailer. This would inflict irreparable damage on the town, its residents and its businesses.

¹ The gravity model "provides a rational means of assessing how a given scale and quality of development is likely to alter current shopping patterns and hence impact on existing baseline turnovers." (DCLG, *Planning for Town Centres – Practice Guidance on Need, Impact and the Sequential Approach*, 2009, para. D.25). Its concept is derived from Reilly's Law of Retail Gravitation (1931), one of the foundations of modern spatial economic analysis.

Independent Review by Dr David Rogers of the Saïd Business School at the University of Oxford



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May 10, 2012

Dr. Jonathan Reynolds
Academic Director
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Re: Economic Sustainability Assessment, Edward Hudson

Dear Jonathan,

As requested, I have reviewed what appears to be a very thorough piece of work. The Appendices were of most interest, as usual!

The conclusions are probably correct. My only concerns/suggestions are as follows:-

1. The leakage of expenditures to local stores appears to be unusually low (about 4%).
2. The Huff gravity model is inevitably crude, i.e. fiddle factors for distance weights, significant approximations for store attractiveness, and no consideration of demographic segmentation (for example, Aldi's shoppers profile versus that of Waitrose).

In my opinion, a North American-type gravity model would be more precise but would require turnover estimates for all competing supermarkets and unique survey-based norms for the distance decay curves. These were not available for the study and, therefore, I think the author took the best approach available to him.

I hope these comments are useful.

With all best wishes.

Yours truly,

Dr. David Rogers
President

Retail Research: Sales Forecast Models • Consumer Research • Site Evaluation • Market Strategy Planning • Geo-Demographics



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David Rogers is President of DSR Marketing Systems, Inc., a market research and consulting firm which specializes in retail research, including store location analysis, consumer research, and store performance analysis.

David was formerly Head of Site Potential Statistics for J. Sainsbury PLC, the British supermarket chain.

He has given presentation on market research topics for a variety of U.S. and British retailer trade organizations, and is a Co-Director of the Institute's annual Retail Location Analysis programme.

David is co-editor of Store Location and Store Assessment Research, a text-book published by John Wiley and Sons Ltd., the international publishers, and is a regular columnist for a variety of retail trade magazines in Canada, the USA and UK, including Grocery Headquarters in New York, The Retail Digest in Britain, and Canadian Grocer in Canada.

David has consulted with an extensive number of retailer, restaurant, and shopping centre clients in Australia, Canada, France, Iceland, Puerto Rico, Saudi Arabia, Sweden, the UAE, United Kingdom, and the USA.

His experience includes expert witness testimony at planning and traffic impact enquiries and in case concerning Retail Competition and Eminent Domain.

He received his undergraduate degree from the University of Bristol (England), his M.S. from the University of Wisconsin (Madison), USA, and his doctorate from the University of Reading (England). All three degrees were in the field of Urban Studies.

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1.0 Introduction

- 1.1 Sustainability is at the core of planning policy, both national and local.
- 1.2 It is sustainable development that the National Planning Policy Framework (NPPF) seeks to promote. “The purpose of the planning system is to contribute to the achievement of sustainable development.”²
- 1.3 In economic terms, sustainability means “contributing to building a strong, responsive and competitive economy”³. For town centres, local planning authorities are called upon to recognise them “as the heart of their communities and pursue policies to support their viability and vitality”⁴. A planning application for a town centre development therefore calls for economic assessment against these criteria. Such an assessment has to be based on present and future need.⁵
- 1.4 Moreover, to meet Milton Keynes planning policy, applications for convenience floorspace must also be able to demonstrate need. The Milton Keynes Retail Capacity Update (2011), carried out as part of the ongoing work on the Core Strategy, recommends the Council to “assess each application [for further convenience floorspace] on its own merit and require that any application is able to demonstrate a localised need for additional floorspace.”⁶
- 1.5 This recommendation flows from the Update’s findings that there is now significant oversupply of convenience floorspace in the Borough and that this situation will continue right up to 2026.⁷ These findings supersede earlier ones⁸ that had previously foreseen a need for more convenience floorspace in the Borough from 2011 to 2026.

² NPPF, paragraph 6.

³ NPPF, paragraph 7.

⁴ NPPF, paragraph 23.

⁵ Following Resolution 24/187 of the United Nations General Assembly, the NPPF defines sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” (NPPF, page 2).

⁶ Roger Tym & Partners, *Milton Keynes Council Retail Capacity Update*, M9550, August 2011, paragraph 4.39 iii).

⁷ These findings were reached even before the oversupply of convenience floorspace was increased by 3,575 sq. m. by the recent approvals of the enlargement of the planned Western Expansion Area store and of the larger Sainsbury store at Shenley Church End.

⁸ Roger Tym & Partners, *The Milton Keynes Retail Capacity and Leisure Study*, M9226, February 2010.

- 1.6 Furthermore, as Planning Application 11/00143/FUL is for a major retail development within an existing centre, under Local Plan Policy R1(iii) permission can only be granted if the development is of an appropriate scale. This is reinforced by the NPPF: “Where an application ... is likely to have a significant adverse impact [on factors affecting the vitality of town centres], it should be refused.”⁹
- 1.7 To meet both national and local planning policy, therefore, assessment of Planning Application 11/00143/FUL is required to establish whether the proposed new food retail store in Cofferridge Close would be economically sustainable, whether such additional convenience floorspace would correspond to local need and whether the proposed store would be of an appropriate scale for Stony Stratford. This calls for quantitative evaluation of the store’s foreseeable catchment area, market share and turnover.
- 1.8 The Retail Statement accompanying the Application does not address the economic sustainability of the proposed store. Its demonstration of need¹⁰ rests on the now obsolete findings of the Milton Keynes Retail Capacity and Leisure Study (2010). It does not attempt a quantitative assessment of the store’s market share relative to existing competition and committed competitive developments, stating only that “due to the size of the store in relation to existing provision, it is not considered that it will draw significant trade from beyond its local catchment area.” This area is not defined in more precise geographical terms than the statement that the store “is intended to serve the needs of Stony Stratford’s local residents, visitors to the town centre, and the immediate surrounding area.”¹¹ The store’s intended market is not quantified in demographic or economic terms.
- 1.9 This Economic Sustainability Assessment is therefore presented for the consideration of the Development Control Committee. The aims of the Assessment are to:
- identify the proposed store’s catchment area;
 - quantify its foreseeable market within this catchment area in 2016;
 - forecast its turnover in 2016; and
 - assess the viability of the proposed store and hence its economic sustainability.

⁹ NPPF, paragraph 27.

¹⁰ Barton Willmore LLP, *Retail Statement*, 17073/A5/AI, January 2010, paragraphs 4.24 and 4.26.

¹¹ *Retail Statement*, paragraphs 5.4 and 3.4.

PART 1 – CALCULATION OF CATCHMENT AREA

2.0 Methodology

- 2.1 To achieve the aims set out above, the Assessment will apply a classical gravity-model approach. Gravity models are a recognized methodology used for the last half-century in many forms of spatial economic assessment, especially in the field of retail demand. Whilst not taking all factors into account, they are considered the most reliable predictor available of likely demand for a proposed development. Further background information on gravity modelling is given in **Appendix 1**.
- 2.2 As the range of store choice available to the consumer depends largely on whether or not he has access to a motor vehicle, the car-owning and non-car-owning markets will be analysed separately. For each market, the relative attraction of each store within easy reach of the consumer will be considered as directly proportional to its sales area and inversely proportional to the time required to reach it, whether by car, by bus or on foot. A step-by-step approach will be adopted, as follows:
1. Define the study area.
 2. Divide the study area into population zones as finely and evenly as possible.
 3. Evaluate the numbers of car-owning and non-car-owning households in each population zone in 2011 and in 2016, as well as the total population living in each type of household in each year.
 4. Identify all supermarkets which could attract convenience-goods shopping in 2011 and in 2016 from any of the population zones identified, and establish their net convenience-goods sales areas in each year as well as the main characteristics affecting their competitive strength.
 5. Identify, for the car-owning and non-car-owning markets separately, the shortest travelling-time from each population zone to each of the supermarkets identified in the previous step.
 6. Build a gravity model to forecast each store's share of the car-owning and non-car-owning markets in each population zone in 2016, using the input from the steps 4 and 5, and calibrating the model on known present market data.

7. Calculate the total “pot” of supermarket convenience-goods spending by the car-owning and non-car-owning populations respectively in each zone in 2016 by applying per-capita convenience-goods expenditure forecasts to the relevant population forecasts in step 3 above for that zone.
8. Forecast the turnover of the proposed Cofferridge Close store zone-by-zone in 2016 by applying its forecast shares of the car-owning and non-car-owning markets (step 6) to the relevant convenience-goods spending “pot” for that zone (step 7), and summing the results.
9. Assess the viability of the proposed Cofferridge Close store in 2016 by comparing its forecast turnover in step 8 to forecast supermarket convenience-goods benchmark data.

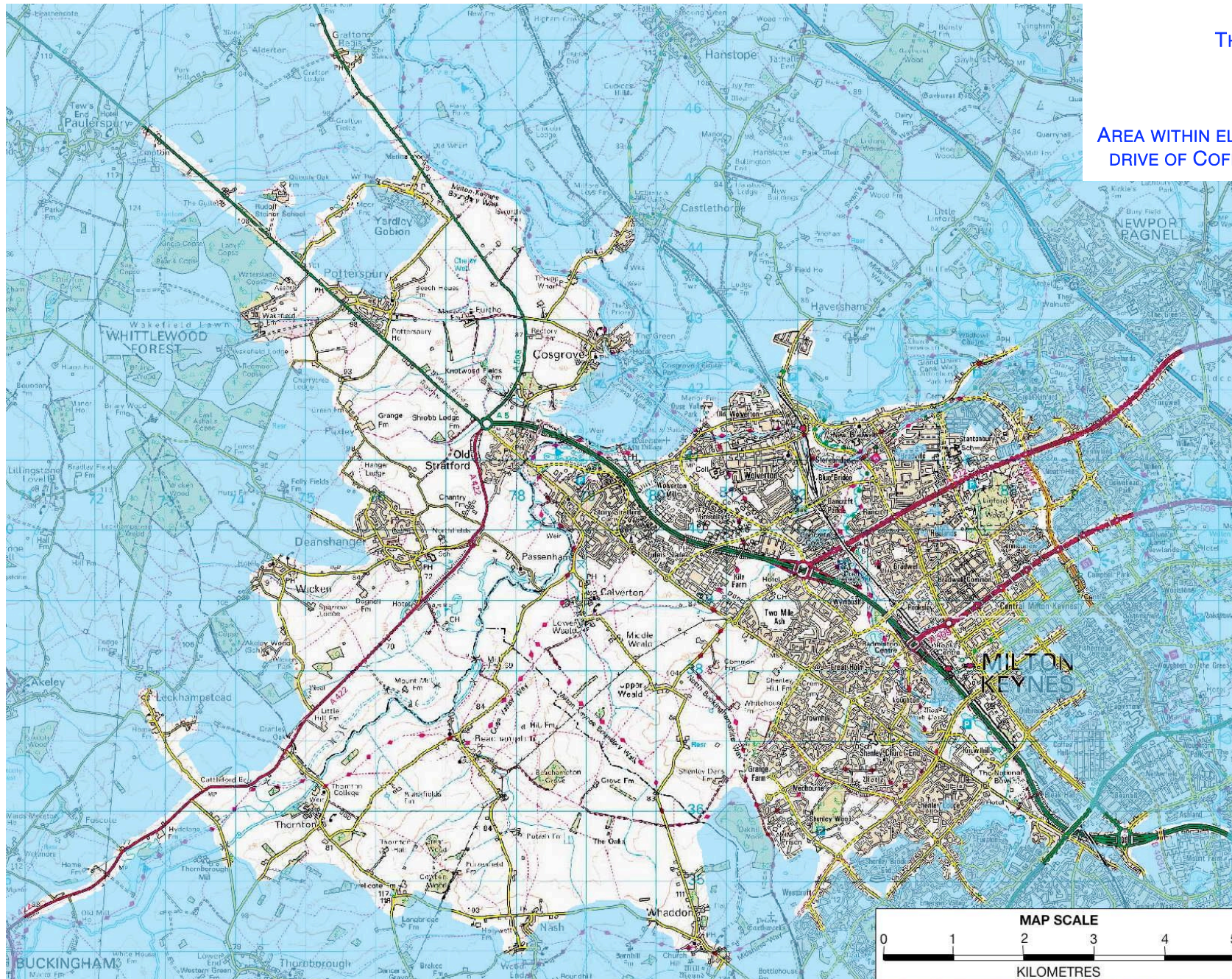
3.0 Definition of the study area

- 3.1 The first step in the methodology is to define the study area. This is the geographical space within which the methodology will identify the possible catchment area for the proposed store. Based on information on convenience-goods shopping patterns in Milton Keynes¹², the area within about 11 minutes' drive of Cofferridge Close (the "11-minute isochrone") has been taken as a basis, as shown in **Figure 1**.
- 3.2 Thanks to Milton Keynes' grid network of trunk roads, this area extends much further east and south-east towards Central Milton Keynes than the market the proposed store is intended to serve. This will facilitate the calibration of the model on known market shares in the whole of the Stony Stratford/Wolverton area. The competitive effects of the many other supermarkets in this area and beyond, both for residents of this area and for those of Stony Stratford, will be taken into account at a later stage of the methodology.
- 3.3 In the more rural area to the north, west and south of Stony Stratford, the study area includes all or most of Old Stratford, Cosgrove, Potterspury, Grafton Regis, Yardley Gobion, Deanshanger, Wicken, Thornton, Beachampton, Nash, Whaddon, Calverton and Passenham.
- 3.3 The study area also includes the whole of the site of the future Western Expansion Area (zones 10.1-3 and 11), the commencement of which by 2016 will be taken into account.
- 3.4 The study area covers some 13,600 hectares. In demographic terms, the population of the study area stood at 73,016 at the time of the 2001 census. On the basis of current forecasts, it is expected to increase 33% by 2016, to about 96,800. Some of this increase will come from the completion of part of the Western Expansion Area, which is expected to house some 3,500 residents by 2016.

¹² *The Milton Keynes Retail Capacity and Leisure Study*, Spreadsheet 11a.

FIGURE 1
THE STUDY AREA

**AREA WITHIN ELEVEN MINUTES'
DRIVE OF COFFERIDGE CLOSE**



Map base contains Ordnance Survey data © Crown copyright and database right 2012. Source for isochrone limits: Bing Maps, July 2012

4.0 Population zones within the study area

- 4.1 The second step in the methodology is to divide the study area into population zones as finely and evenly as possible. Adopting a fine-grain demographic approach in the interest of a robust market analysis, the study area has been divided into the 59 zones shown in **Figure 2**.
- 4.2 Except for the two zones representing the Western Expansion Area, all are constructed from Office for National Statistics (ONS) output areas, for which detailed 2001 census data and population estimates up to 2010 are published. The relationship of each zone to ONS source geography is detailed in **Appendix 2**.
- 4.3 For all zones within the borough of Milton Keynes, the population forecasts for 2016 have been derived from those published by the Milton Keynes Observatory for the relevant civil parish. For the other zones, situated within South Northamptonshire and Aylesbury Vale, ONS estimates of population growth up to 2010 have been extrapolated to 2016. Full demographic data and details of forecasting method for each zone are given in Appendix 2.
- 4.4 Zones 1–5 cover the civil parish of Stony Stratford. These and the other currently urbanised zones within the study area (6–41) contain approximately equal numbers of population (about 1,500 each in 2001, forecast to rise to an average of about 1,870 each in 2016). This provides as homogeneous and detailed a basis as possible for analysing market shares in the most heavily populated part of the study area. For even greater precision in zone 1, in which Cofferridge Close is located, six sub-zones have been created, as shown in the inset to Figure 2.
- 4.5 The Western Expansion Area, whose construction is expected to begin in 2013, is represented by population zones 42 and 43. Their boundaries are as defined in the Development Briefs for WEA zones 10.1–3 and 11 respectively.
- 4.6 The rural part of the study area, covered by zones 44–59, is more disparate in population terms. Only six of these zones contain settlements of appreciable size (Deanshanger, Potterspury, Yardley Gobion, Cosgrove, Old Stratford and part of Haversham), each of which forms one zone. Their forecast populations in 2016 range from about 700 (Cosgrove) to about 3,600 (Deanshanger). The remaining ten rural zones are very sparsely populated (fewer than 500 inhabitants forecast in each in 2016).
- 4.7 A summary of the total population in these groups of zones is presented in **Table 1**.

TABLE 1
SUMMARY OF POPULATION OF STUDY AREA

	TOTAL POPULATION		
	2001 CENSUS	2016 FORECAST	2001-16 % CHANGE
Stony Stratford CP (zones 1–5)	7,567	7,800	+3.1%
Other urban (zones 6–41)	54,831	69,300	+ 26.4%
WEA (zones 42 & 43)	—	3,500	—
Rural (zones 44–59)	10,618	16,200	+ 52.6%
Total Study Area	73,016	96,800	+32.6%

Source: Appendix 2

**FIGURE 2
POPULATION ZONES**



Map base contains Ordnance Survey data © Crown copyright and database right 2012. Zone boundaries derived from ONS NeSS geography and WEA Development Briefs

5.0 Car-owning and non-car-owning population in each zone

- 5.1 The third step in the methodology is to evaluate the numbers of car-owning and non-car-owning households in each population zone in 2011 and in 2016, as well as the total population living in each type of household in each year. It is from their relative proportions that the potential market in each zone for the proposed Cofferridge Close store will be calculated.
- 5.2 For all zones other than the two representing the Western Expansion Area, the numbers of car-owning and non-car-owning households in each zone have been projected forward to 2011 and 2016 from ONS 2001 census data using official estimates or forecasts of population growth. The total population living in each type of household in each year has been estimated from ONS civil parish data on the composition of non-car-owning households.
- 5.3 For zones 42 and 43 (the Western Expansion Area), the total number of households expected to be living in each zone by 2016 has been estimated from Milton Keynes Observatory population projections for these areas. The breakdown between car-owning and non-car-owning households in these zones has been assumed to be the same as the average for zones 1–41 (78.9% and 21.1% respectively).
- 5.4 A summary of the 2011 estimates and 2016 forecasts for each type of household in the study area, rounded to the nearest hundred, is presented in **Table 2**. Full zone-by-zone data for household numbers and populations in each year are given, with notes on method of calculation, in **Appendix 2**.

TABLE 2: SUMMARY OF CAR-OWNING AND NON-CAR-OWNING HOUSEHOLD ESTIMATES AND FORECASTS

	CAR-OWNING HOUSEHOLDS					NON-CAR-OWNING HOUSEHOLDS				
	NUMBERS OF HOUSEHOLDS			POPULATION		NUMBERS OF HOUSEHOLDS			POPULATION	
	2001 CENSUS	2011 ESTIMATE	2016 FORECAST	2011 ESTIMATE	2016 FORECAST	2001 CENSUS	2011 ESTIMATE	2016 FORECAST	2011 ESTIMATE	2016 FORECAST
Stony Stratford CP (zones 1–5)	2,509	2,500	2,600	6,300	6,600	670	700	700	1,100	1,200
Other urban (zones 6–43)	17,241	20,200	22,900	55,300	62,900	4,619	5,200	5,900	8,900	10,000
Rural (zones 44–59)	3,753	4,900	5,700	13,000	15,200	445	600	700	800	900
Total Study Area	23,503	27,500	31,200	74,700	84,700	5,734	6,500	7,200	10,800	12,100

Source: Appendix 2

6.0 Competing supermarkets

6.1 The fourth step in the methodology is to identify all supermarkets (including Cofferridge Close) which could potentially attract convenience-goods shopping in 2011 and in 2016 from any of the population zones identified, and establish their net convenience-goods sales areas in each year as well as the main characteristics affecting their competitive strength.

6.2 In order to take account of all possible sources of competition for the custom of residents of the study area by 2016, all existing and committed supermarkets within 22 minutes' drive of Stony Stratford, offering parking facilities and a suitable range of convenience goods to attract a weekly shopping trip, have been identified. In addition to Cofferridge Close itself, there are 19 such supermarkets, distributed as follows:

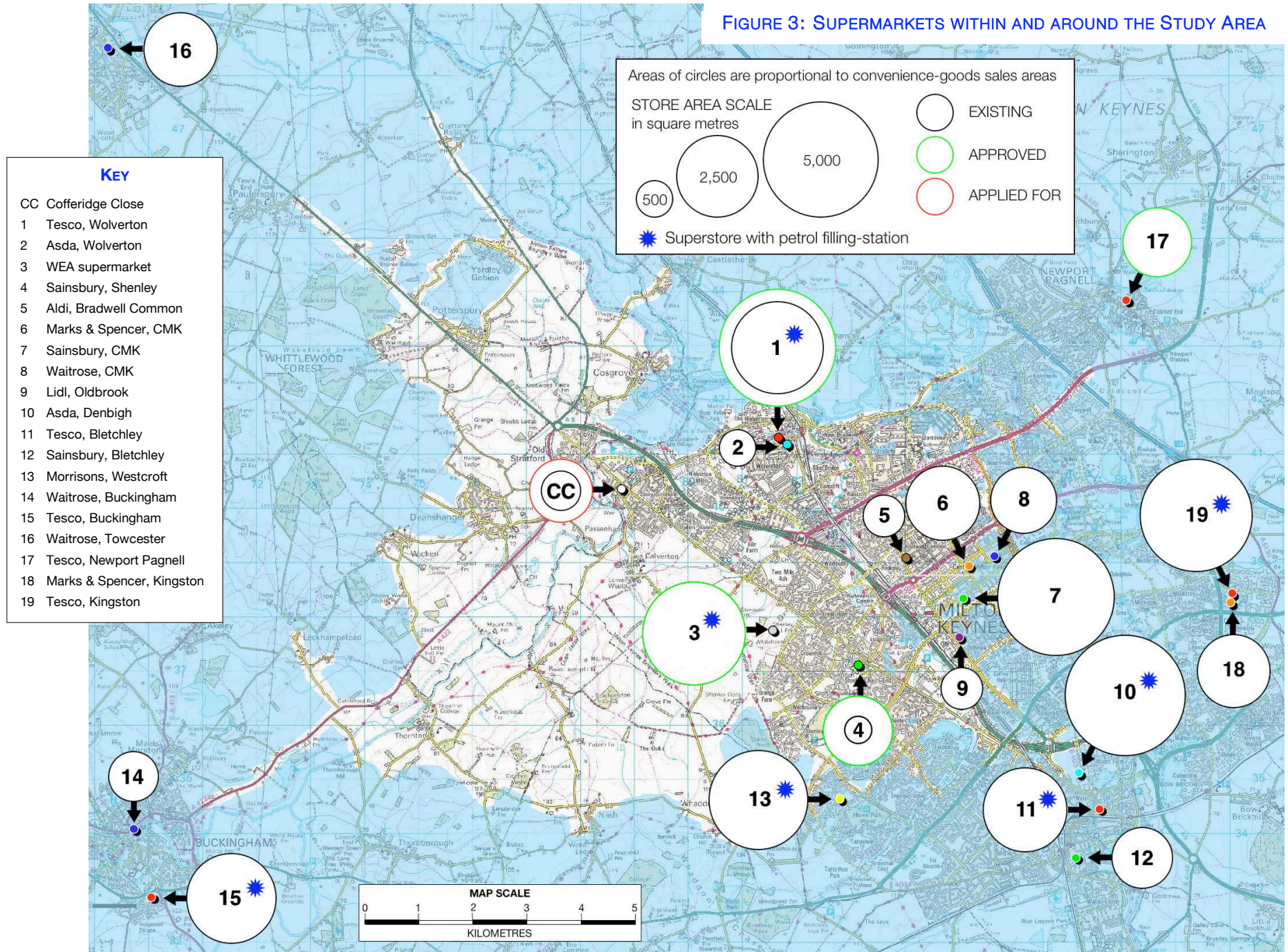
- 10 supermarkets located within 11 minutes' drive of Stony Stratford: Tesco (Wolverton); Asda (Wolverton); Sainsbury (Shenley Church End); Aldi (Bradwell Common); Waitrose (Central Milton Keynes); Marks & Spencer (Central Milton Keynes); Sainsbury (Central Milton Keynes); Lidl (Oldbrook); Asda (Denbigh); and the supermarket to be built in the Western Expansion Area. In varying degrees, depending on their size and travelling-time from Stony Stratford, these may compete with the proposed Cofferridge Close store even in its core catchment area.
- 9 supermarkets located within 12–22 minutes' drive of Stony Stratford: Morrisons (Westcroft); Tesco (Bletchley); Sainsbury (Bletchley); Tesco (Buckingham); Waitrose (Buckingham); Waitrose (Towcester); Tesco (Kingston); Marks & Spencer (Kingston); and the future Tesco store at Newport Pagnell for which planning permission has been granted. Whilst many of these are too remote to have any significant competitive effect on the proposed store, some may attract custom from the periphery of its catchment area, notably in the rural area north, west and south of Stony Stratford.

6.3 The net convenience-goods sales area (existing and approved) of most of these stores has been obtained from retail capacity studies carried out for the relevant local authorities and from planning applications. In other cases, their net convenience-goods sales area has been estimated from available data on their total net sales area. As this Assessment is

based on present commitments, only existing and approved store sizes have been taken into account in the gravity model.

- 6.4 All 20 supermarkets are listed, with their addresses, their net convenience-goods sales areas and the main characteristics affecting their competitive strength, in **Appendix 3**. The locations and relative sizes of all 20 supermarkets are illustrated in **Figure 3**.
- 6.5 In terms of competitive strength, the 20 supermarkets can be classified in two distinct categories:
- ‘Superstores’, identifiable not only by their size but also by the presence of a petrol filling-station. Most of these are also open 24 hours a day, with some providing such convenient other services as a pharmacy or optician and/or a substantial offer of comparison goods. Weekly shopping trips at such stores can thus usually be conducted outside the opening hours of other supermarkets, and can be combined with shopping for other goods as well to form one-stop multi-purpose trips. With a filling-station offering petrol at attractive prices, such ‘superstores’ are at a clear competitive advantage in the car-owning market. Stores 1, 3, 10, 11, 13, 15 and 19 are considered to come within this category; and
 - the thirteen other supermarkets without a petrol filling-station and with few if any of the other features of the ‘superstore’ category.
- 6.6 Within this latter category of ordinary supermarkets without petrol filling-stations, the present operator of the Cofferridge Close store clearly stands well below the others in terms of market profile. Among all those listed in Appendix 3, its current operator is the only one that does not advertise in national or electronic media, have a loyalty card scheme, offer internet shopping or provide a delivery service.
- 6.7 These marked differences of competitive strength can be expected to show up in the results of the gravity model. They will need to be taken into account in calibrating the model on present results and, depending on the extent to which they will continue into the future, in adjusting its forecasts.

FIGURE 3: SUPERMARKETS WITHIN AND AROUND THE STUDY AREA



Map base contains Ordnance Survey data © Crown copyright and database right 2012. Source for store data: Appendix 3.

7.0 Journey-times

- 7.1 The fifth step in the methodology is to identify, for the car-owning and non-car-owning markets separately, the shortest journey-time from each population zone to each of the supermarkets identified in the previous step.
- 7.2 For each population zone —or, in the case of zone 1, each of its six sub-zones— a single reference point has been selected, expressed as a full post code. As far as possible, each reference point is situated towards the centre of the main residential area within the zone or sub-zone. Each of the 20 store locations has been identified by its full post code.
- 7.3 For the car-owning market, the driving-time in minutes via the quickest route from each of these 64 reference points to each of the 20 stores has been derived from a standard road-mapping resource. In the Western Expansion Area, where the road network does not yet exist, estimates have been used. All routes take account of one-way restrictions, roundabouts and junctions, and the driving-times allow for the different speeds attainable on the various categories of highway used along the route. Although they cannot take account of any temporary restrictions or diversions, the results are considered to represent a realistic estimate of the average time it will take to drive from each reference point to each supermarket by the quickest route. The driving-times for these 1,280 car routes are shown in **Appendix 4**.
- 7.4 For the non-car-owning population, the quickest journey-times in minutes have been calculated from each of the 64 reference points to all stores reasonably accessible to this market segment: on foot to those stores that are within easy walking distance, and on foot and by bus to more distant stores (using currently operated services with a frequency of at least one per hour during weekday shopping times). In the absence of information on future public transport serving the Western Expansion Area, its proposed store has had to be omitted from the analysis of the non-car-owning market, as well as journey-times from zones 42 and 43 to all the stores considered¹³. The journey-times for practicable routes on foot and by bus are shown, with notes on their basis of calculation, in **Appendix 5**.

¹³ The resultant distortion of the results of the model will be in favour of the Cofferridge Close site. If there is a frequent bus service between Stony Stratford and the Western Expansion Area it is likely, in view of the disparity of store sizes, to carry more Stony Stratford residents to the WEA store than it is to bring WEA residents to Cofferridge Close. The applicant's objection to the recently approved enlargement of the WEA store supports the view that the Cofferridge Close proposal is vulnerable to competition from the WEA store.

8.0 Gravity model

8.1 The sixth step in the methodology is to build a gravity model to calculate each store's probable share of the car-owning and the non-car-owning market in each population zone in 2016, after calibration on known present market data. The existing and approved store sizes, the journey-times and the demographic data established in the previous steps will form the input data for the model.

8.2 The gravity model works on the principle that the larger a supermarket is and the shorter the time required to reach it, the more likely it will be to attract households to shop there. On this principle, the model calculates the "gravitational pull" exerted by each supermarket on the car-owning and non-car-owning residents of each population zone, relative to the "pull" of other supermarkets accessible to them within a specified journey-time.

8.3 Analysing the car-owning and non-car-owning markets separately, the gravity model:

- first calculates an "attractiveness factor" in each zone for each supermarket, in proportion to the store's size and in inverse proportion to the time required to reach it; and
- then calculates the market share of each supermarket in each zone by expressing its attractiveness factor as a percentage of the total of all attractiveness factors for that zone.

8.4 These market shares are then applied to the "pot" of supermarket convenience-goods spending by the car-owning and non-car-owning populations respectively in each zone, and the results are summed to calculate the total turnover of each supermarket in each zone.

8.5 As shown in the flow diagram in **Figure 4**, the model is run twice:

- the first time using existing store sizes, in order to calibrate the model on known market data for the existing situation; and
- the second time using the store sizes supposed for 2016 (i.e. the proposed size for the Cofferridge Close store; and existing sizes and, where appropriate, size commitments from approved planning applications for all other stores).

FIGURE 4: GRAVITY MODEL FLOW DIAGRAM

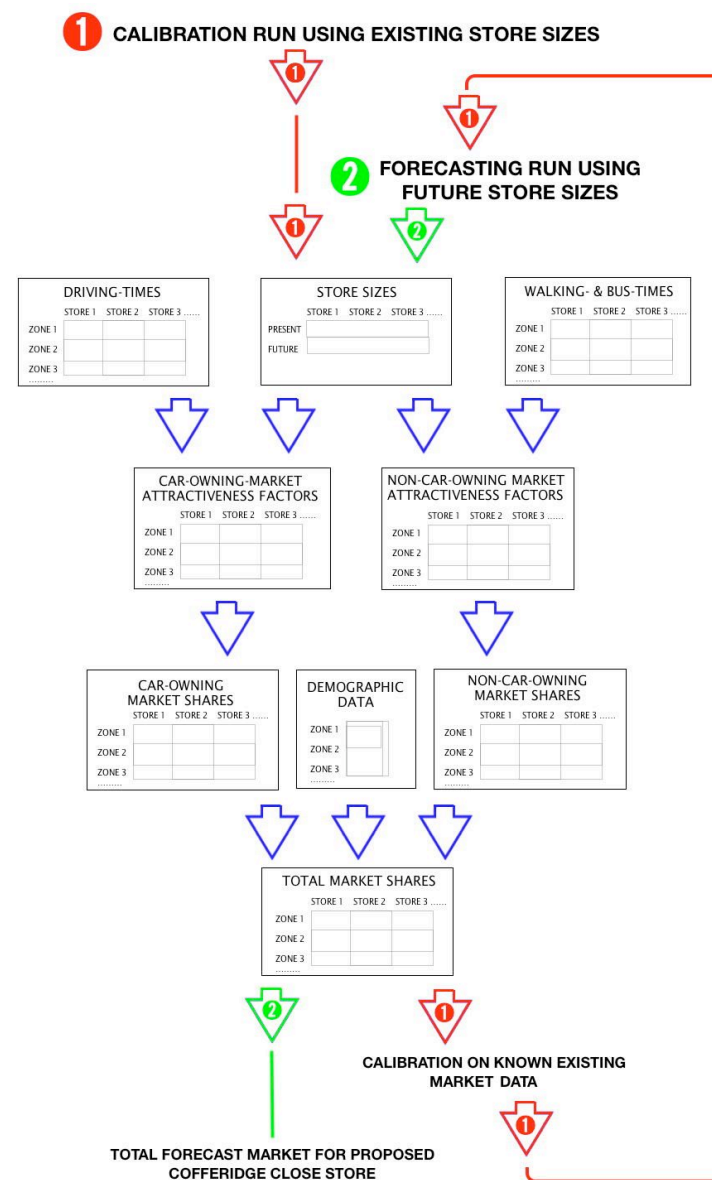
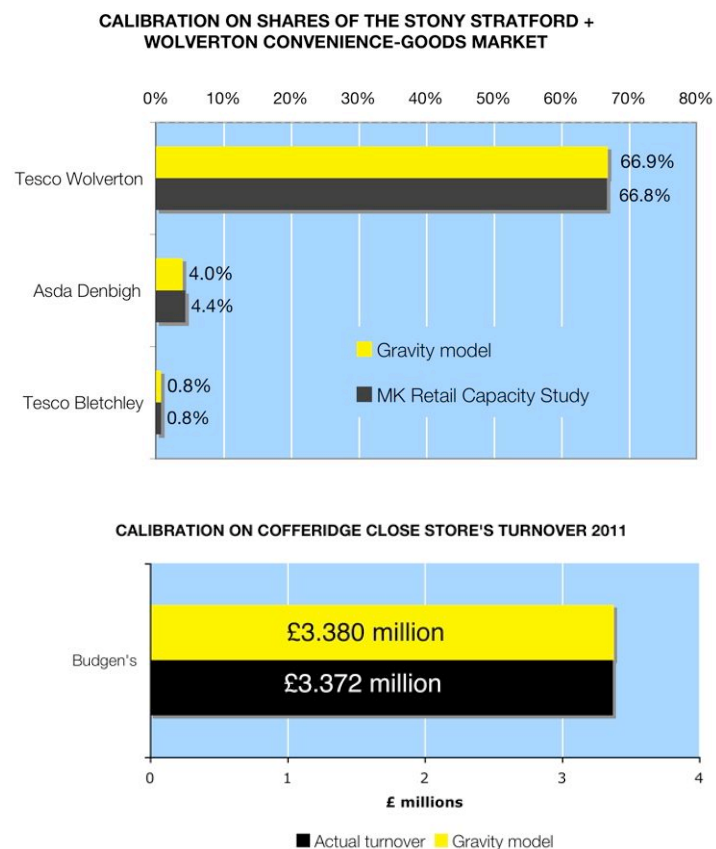


FIGURE 5: CALIBRATION



8.6 The model has been calibrated on the known present shares of the Stony Stratford/Wolverton market held by three major stores and on the known 2011 turnover of the present Cofferridge Close store, as described in **Appendix 6**. The results achieved are illustrated in **Figure 5**.

8.7 As anticipated in paragraph 6.6 above, the present Cofferridge Close store proves to be exerting much less competitive “pull” than the other supermarkets included in the model. Its attractiveness factors are shown on calibration to be as much as 71% below the level that would be expected for a store of its present size in this location. This has therefore been factored into the calibration.

8.8 In preparing to run the model to simulate the market in 2016, the question arises as to the cause of this present under-performance. If it is entirely due to the market profile of the present operator, then it can be factored out, the Cofferridge Close store being expected to regain its full competitive “pull” once it has an assumed first-tier operator with a higher market profile.

8.9 But such a large measure of under-performance suggests that part or all of it may be due to another factor which, being site-specific, will continue to affect future performance, whatever the operator. This factor is the restricted vehicle access to the site, through the brick-pillared archway connecting Cofferridge Close to Silver Street, shared by all cars and goods vehicles entering or leaving. Manœuvring through the archway is often slow and difficult due to its limited width and visibility. On exit, the visibility splay of all drivers is cut off to the left by the projecting building line of 25 Silver Street. On entry, drivers of articulated lorries approaching the site from the north-west have to pull across to the wrong side of the road in order to see enough of the pillars to judge their turn before commencing the manœuvre. This blocks all traffic in both directions and often requires other vehicles to reverse in order to give way. The resultant traffic snarl-ups, with concomitant damage to vehicle bodywork and to the brick pillars themselves, must be presumed to reduce the attraction of the Cofferridge Close store for motorists. Under the proposal, with more car traffic generated by the store and greatly increased numbers of goods-vehicle movements throughout the day (including at peak times)¹⁴, the deficiencies

¹⁴ Under the proposal, heavy goods vehicle movements through the archway would quadruple from 2 arrivals and 2 departures per day at present (outside peak hours) to 8 arrivals and 8 departures staggered throughout the day (including one departure and one arrival in peak hours). See Transport Assessment, Table 5.15.

of the site access can be expected to have an even greater negative effect on the store's ability to compete.

8.10 Because the relative weighting of these operator-specific and site-specific factors in the current under-performance is unknown, the forecasting run of the model has been made in three scenarios:

- a minimum scenario, in which the present under-performance of the Cofferridge Close store is ascribed entirely to the site-specific factor of the Silver Street archway, whose effect is therefore fully retained¹⁵;
- a median scenario, in which the present under-performance of the Cofferridge Close store is ascribed half to the operator-specific factor and half to the site-specific factor. Because, in this scenario, half the present competitive weakness will remain in the future, even with a fully-competitive store operator, only half of the present under-performance has been factored out and half retained (for the car-owning market only); and
- a maximum scenario, in which any site-specific factor is disregarded completely, the whole of the present under-performance of the Cofferridge Close store being factored out on the assumption that it is due entirely to the market profile of the operator and that it will cease to apply once a fully competitive retailer is in place; and

8.11 The calculations for 2016, using the proposed size of the Cofferridge Close store and the existing size commitments¹⁶ of all the other stores, are presented as follows:

- the attractiveness factors calculated by the model from the store sizes and journey-times are presented, for the car-owning- and non-car-owning markets respectively (with minimum, median and maximum scenarios for the car-owning market), in **Appendices 7, 8, 9 and 10**; and
- the market shares calculated by the model for each store in each zone are presented, for the car-owning- and non-car-owning markets respectively (with minimum, median and maximum scenarios for the car-owning market), in **Appendices 11, 12, 13 and 14**.

¹⁵ Because the site-specific factor relates to vehicle access and therefore affects car-borne traffic only, it has been retained only for the car-owning market for the Cofferridge Close store..

¹⁶ i.e. taking account of approved planning applications, but disregarding any applications pending decision.

- 8.12 As called for in step seven of the methodology, the total “pot” of supermarket convenience-goods spending by the car-owning and non-car-owning populations respectively in 2016 has been forecast in each zone by applying the latest convenience-goods spending estimates for 2016 given by the Milton Keynes Retail Capacity Update (2011) to the relevant population forecasts in Appendix 2. The results are shown in columns 1 and 2 of **Appendix 15**.
- 8.13 In each of the three scenarios, the shares of the car-owning and non-car-owning markets calculated by the model for the proposed Cofferridge Close store are then applied zone-by-zone, to the total “pot” of supermarket convenience-goods spending by the car-owning and non-car-owning populations respectively, as called for in step eight of the methodology. The car-owning and non-car-owning results are then summed zone-by-zone to produce the total turnover forecast for the proposed store in 2016. The results are shown in columns 4 to 12 in Appendix 15 and summarised in **Table 3** below.
- 8.14 In each of the three scenarios, the market share of the proposed store in each zone is calculated by expressing its forecast turnover as a percentage of the total forecast convenience-goods spending for that zone. The results are shown in columns 13 to 15 in Appendix 15 and summarised in **Table 3** below.
- 8.15 The market-share and turnover forecasts for the proposed Cofferridge Close store are analysed, and the store’s viability assessed in comparison with supermarket benchmark data, in Chapters 9.0 and 10.0 below.

TABLE 3: SUMMARY OF TURNOVER AND MARKET SHARE FORECASTS FOR THE PROPOSED STORE IN 2016

	TURNOVER			MARKET SHARE		
	MINIMUM	MEDIAN	MAXIMUM	MINIMUM	MEDIAN	MAXIMUM
Stony Stratford CP (zones 1–5)	£3,443,000	£4,759,000	£5,575,000	22.3%	30.8%	36.0%
Other urban (zones 6–43)	£1,034,000	£1,477,000	£1,913,000	0.7%	1.0%	1.3%
Rural (zones 44–59)	£1,603,000	£2,990,000	£4,207,000	5.3%	10.0%	14.0%
Total	£6,080,000	£9,226,000	£11,695,000			

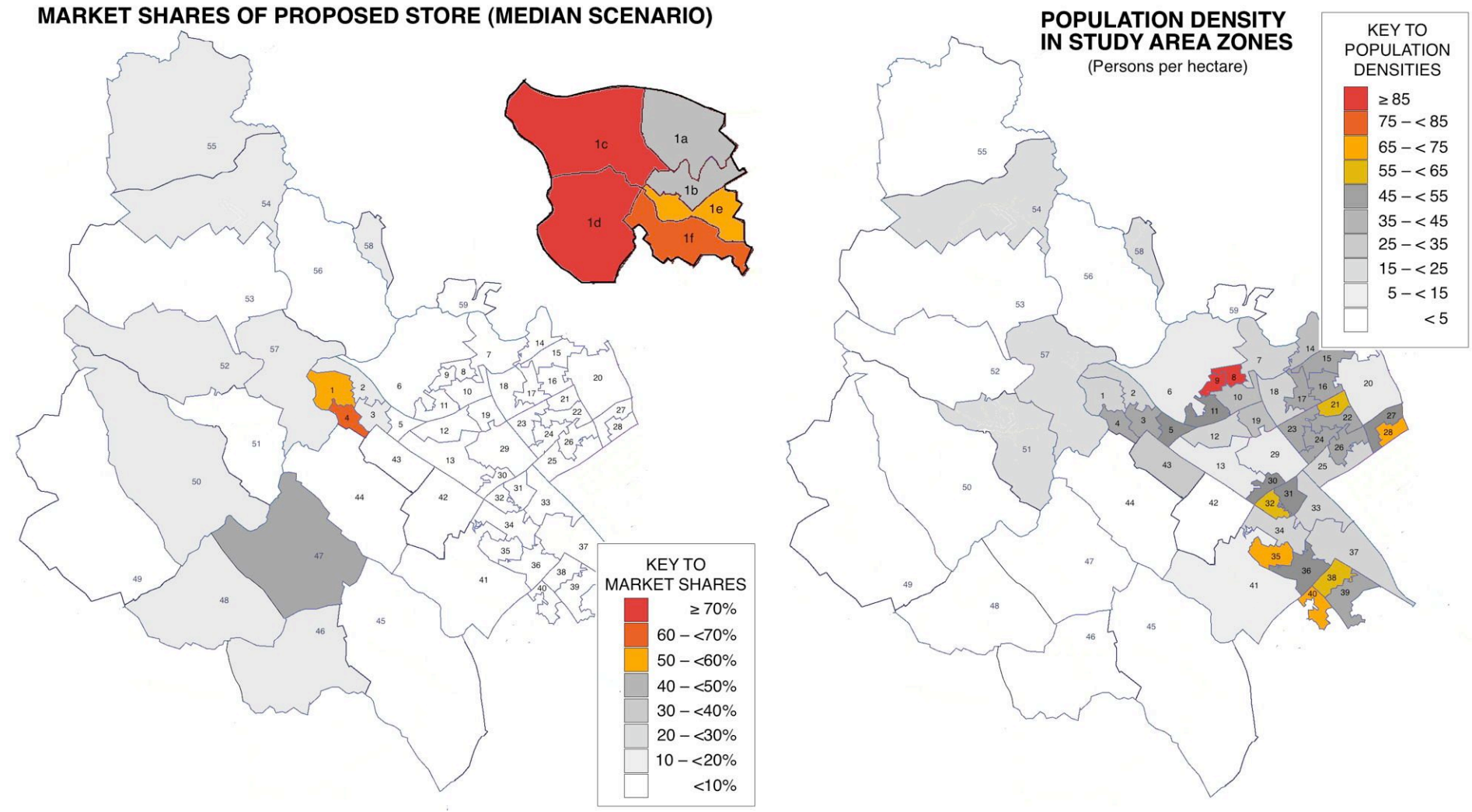
Source: Appendix 15, turnover rounded to nearest £1,000

PART 2 – ANALYSIS OF RESULTS

9.0 Catchment area and market share

- 9.1 The geographical extent of the catchment area for the proposed Cofferridge Close store in 2016 is defined by its total market share in each population zone, as calculated by the gravity model. These shares have been calculated in the three scenarios described in paragraph 8.10 above, all of which assume a fully-competitive first-tier operator for the proposed store.
- 9.2 The total market shares calculated for each zone in 2016 are presented in Appendix 15 and summarised in **Table 3**. The market shares in the median scenario are illustrated, with the population density of each zone in 2016, in **Figure 6**.
- 9.3 Within the civil parish of Stony Stratford (zones 1–5), the proposed store’s market share averages about 31% overall in the median scenario, but varies considerably from one zone to another. In the southwestern part (zone 4), it reaches 61% but in the eastern part (zones 2, 3 and 5), it falls away to between 10% and 15%. The same fall-off towards the east is apparent within zone 1 itself: in sub-zones 1c and 1f, the store’s market share exceeds 70%, but in sub-zones 1a and 1b, in proximity to the Wolverton Road, it is below 40%. These variations reflect the dominant competitive pressure exerted from the east by the enlarged Tesco Wolverton store.
- 9.4 In the rest of the urban area (zones 6–43), where there is strong competition from many large supermarkets, the proposed store’s market share is much lower, averaging about 1% in the median scenario. It reaches 5% or more only in Greenleys, Hodge Lea and Stacey Bushes (zones 11, 12 and 19), whose non-car-owning residents have a bus route to Stony Stratford. In the rest of this area, the share is negligible, being mostly well under 1%.
- 9.5 In the rural area (zones 44–59), much of which is more strongly attracted to Tesco’s stores at Wolverton and Buckingham as well as those of Waitrose at Towcester and Buckingham, not to mention the future Western Expansion Area supermarket, the proposed store’s market share averages only about 10% in the median scenario – and this in a sparsely populated region.

FIGURE 6: MARKET SHARES AND POPULATION DENSITY IN 2016



Source: Appendix 15 (market shares) and Appendix 2 (population density)

- 9.6 As shown by comparison between the two maps in Figure 6, it is in zones of low or moderate population density that the store's market share is generally highest, whilst its share is negligible in most of the more densely populated zones to the south-east of Stony Stratford. The store's market is thus restricted mainly to Stony Stratford itself, with limited custom from the rural area to the north and west and very little from the urban area to the south-east.
- 9.7 The main reason for the relatively low market penetration achieved by the proposed store—even in the maximum scenario—is the highly competitive situation in the retail food market in this region. Following recent planning decisions, competition in the Stony Stratford area will now be dominated by two superstores: the already market-dominant Tesco store at Wolverton, whose enlargement has been approved, and the planned store in the Western Expansion Area, a major enlargement of whose floorspace has also been approved. These two giant foodstores, offering a combined total of more than 9,000 square metres of convenience floorspace in immediate proximity to Stony Stratford, will largely outweigh the effect of enlarging the Cofferridge Close store as proposed.
- 9.8 For the car-owning market, the results of the gravity model show that the competitive weakness of the proposed Cofferridge Close store is attributable to three main factors:
- The competitive disadvantage from which the Cofferridge Close site suffers by virtue of its location. It can be accessed only via a series of unclassified streets and junctions in a built-up area (either High Street → Church Street → Market Square → Silver Street → Cofferridge Close; or Horsefair Green → Silver Street → Cofferridge Close). In terms of driving-time from most residential zones in the study area, this represents a penalty of about two extra minutes, enough to decrease the site's attraction appreciably in a highly competitive market.
 - Conversely, the competitive advantage enjoyed by other supermarkets in the vicinity by virtue of their location and the layout of roads near Stony Stratford. The main competing supermarkets are mostly situated on or near main roads providing fast access from many directions. In addition, Queen Eleanor Street and the A5 offer rapid access from areas on the east side of Stony Stratford, from Old Stratford and from much of the rural area to the north and west to supermarkets in Wolverton and—via the grid road system—to stores elsewhere in Milton Keynes. Many of these

areas, although geographically closer to Cofferridge Close than to Wolverton, are further away in terms of driving-time and therefore "leak" to Wolverton.

- The fact that the proposed store cannot offer a petrol filling station, the site being unsuited for such a facility. In contrast, its two giant rivals in 2016, Tesco Wolverton and the future Western Expansion Area store will each have one, with corresponding added attraction for the car-owning market.

9.9 The local non-car-owning market is also less captive than might be assumed, because the bus routes calling at Stony Stratford, although fewer in number and frequency than when the applicant's Transport Assessment was made¹⁷, offer direct access to some of the main competing stores. Tesco and Asda in Wolverton are barely five minutes away from Stony Stratford by bus route 5, while Waitrose and Marks & Spencer in Central Milton Keynes are little more than ten minutes away by bus route 89 and Aldi at Bradwell Common can be reached in twenty minutes by bus route 5¹⁸. These bus routes thus serve as much to take Stony Stratford residents to other supermarkets elsewhere in Milton Keynes as to bring custom to Cofferridge Close.

9.10 It should be stressed that the market shares shown in Table 3 are unlikely to be fully achieved in practice. As no potential operator has yet been identified for the proposed Cofferridge Close store, the model's forecasts are based on the contradictory assumptions that:

- the operator of the proposed store would be a first-tier food-retailer with a market profile such that it could compete on equal terms with its closest major rivals, notably Tesco and Asda in Wolverton and the as-yet-unidentified operator of the store to be built in the Western Expansion Area; and that
- the proposed store's market would not be adversely affected by competition from other stores of the same brand. It is to be expected that a consumer who is loyal to supermarket brand X will normally prefer the most readily accessible store of that brand. Thus, for the forecasts to be fully achieved in each zone, the operator of the

¹⁷ Of the five principal bus services listed in Table 3.1 of the applicant's Transport Assessment, one (route 14) has since been discontinued, another (route 80) operates only one service per week (instead of one per day) while the one service per day operated by a third (route 30/31) runs only during school terms. The hourly route 89 now serves Deanshanger, but no longer serves Cosgrove and Yardley Gobion, a reduction that is only partly compensated by a new route 90 serving Yardley Gobion three times a day and Cosgrove only twice a day during shopping hours.

¹⁸ Travel times by quickest bus routes as defined in paragraph 7.4 above.

proposed store would have to be a multiple with no other stores within shorter journey-time of that zone.

- 9.11 As all major food multiples have at least one store within reach of the proposed store's catchment area, it seems inconceivable that its operator could, at one and the same time, be both a first-tier retailer and one that would not, to some extent, be "competing with itself" for part of its potential market. Depending on the identity of the operator of the proposed store (and accessorially on that of the operator of the Western Expansion Area store), this factor could materially reduce the proposed store's market, especially in the "other urban" area (zones 6–43) where its market shares are low and where one or more stores of the same brand are very likely to be more readily accessible. To a lesser extent the same is true of the rural area (zones 44–59).
- 9.12 Moreover, the results of the gravity model are predicated on the maintenance of the present traffic system on the streets giving access to Cofferridge Close. It should be noted that Milton Keynes Council (Highways Traffic Management) is currently consulting Stony Stratford Town Council on the possible introduction of a northbound-only one-way restriction on the part of Silver Street between Horsefair Green and the entrance to Cofferridge Close as a sequel to the southbound-only one-way flow now in operation along the southern part of the High Street. Such a restriction —or even a full gyratory clockwise-only system on all the streets bounding Cofferridge Close— appears inevitable sooner or later to cope with natural traffic growth, especially when the Western Expansion Area brings substantial new population to the southern fringe of Stony Stratford.
- 9.13 Whilst such restrictions might ease traffic flow in one direction in Silver Street, they would have a substantial net negative impact on the car-borne demand predicted by the gravity model. This is because, as shown in Figure 6, the core catchment area for the store lies towards the south of Stony Stratford, towards Calverton End. For this reason, some 75% of the car traffic generated by the proposed store would arrive in Silver Street from the Horsefair Green end. With a one-way restriction on this part of Silver Street, such traffic would have to return via Silver Street → Market Square → Church Street → High Street → Horsefair Green¹⁹ instead of by the direct route assumed by the gravity model. This would

¹⁹ The foreseeable alternative "rat run" (Silver Street → Oxford Street → Ousebank Way → Calverton Road) would have such environmental and road-safety impact on this residential area that restrictions would have to be placed on this route as a consequence of any one-way flow system in Silver Street.

lengthen the return journey by about 3 minutes, a penalty sufficient to decrease the attraction of the Cofferidge Close store appreciably in its core southern market vis-à-vis the nearby larger Western Expansion Area store.

9.14 No other sources of custom for the proposed store are available. In particular, the potential for its market to be supplemented by pass-by or diverted car trips is negligible, on account of the highway layout in and around Stony Stratford:

- Pass-by traffic occurs only on main arteries. Silver Street, which is the sole access to the proposed store, is not a main thoroughfare. It is a narrow congested street on the west side of the town, used mainly by traffic whose origin or destination is in the centre of Stony Stratford, not by motorists passing through. Much of the through traffic along the axis of Watling Street between the southeast and the northwest of the town is diverted to the east along Queen Eleanor Street, by-passing the centre completely. It is therefore considered unlikely that the proposed store could attract any appreciable quantity of pass-by traffic.
- As for diverted traffic, it is true that many residents in the southern part of Northamptonshire pass near to Stony Stratford on their way along the A5 to and from their workplaces in Central Milton Keynes. But to divert to Cofferidge Close, they would have, on the southbound journey, to turn off the A5 at the Old Stratford roundabout (5 minutes' driving-time to Cofferidge Close) and rejoin it again at the Bradwell Abbey roundabout (7 minutes' driving-time from Cofferidge Close). A diversion to Cofferidge Close would thus take 12 minutes, incurring a 9-minute penalty over and above the 3 minutes that it takes to drive direct along the A5 between the two roundabouts. Such a penalty would be highly dissuasive of traffic diversion to Cofferidge Close, especially as much of this through traffic has convenience-shopping facilities available at its destination in Central Milton Keynes or en-route, for example at the Bradwell Abbey filling station on H3 (Monks Way).

9.15 There are thus several factors which could cause the proposed store to attract less custom than the model is predicting, but none that could cause it to attract more. The market shares forecast in Table 3 should therefore be considered as upper values that are unlikely to be fully achieved in practice.

10.0 Turnover and viability

10.1 The proposed store's turnover in 2016 has been forecast in the three scenarios by applying its forecast share of the car-owning and non-car-owning markets in each zone to the latest professional forecasts of per-capita supermarket spending on convenience goods in 2016 for the area in which the zone is situated. These calculations (at 2011 price levels) are set out in Appendix 15 and the results are summarised in Table 3.

10.2 The supermarket spending forecasts are derived from those given in the Milton Keynes Retail Capacity Update (2011), spreadsheet 2, for per-capita convenience-goods spending at retail outlets in 2016. These forecasts are shown in Appendix 2. They make allowance for 2.95% of total convenience-goods spending to be by internet²⁰ and for 4.3% to go to small local shops²¹.

10.3 It should be stressed, however, that the resultant proportion of convenience-goods spending available to supermarkets in 2016 may be an over-estimate because household spending patterns are reported to be changing rapidly in two main respects:

- Small proximity convenience-stores are now one of the fastest-growing sectors of the food retailing business, no doubt because the ever-rising real price of petrol increasingly incites consumers to economise on car journeys wherever possible and therefore to shop locally. This is why practically all major food multiples are moving into this sector of the market (for example, Tesco with its Tesco Express stores, Sainsbury with its Sainsbury Local stores, Marks & Spencer with its Simply Food stores, Asda with its recent takeover of many Netto stores, and Morrisons with its M Local stores). The market share of small local shops may therefore be appreciably greater by 2016 than the 4.3% allowed for in these estimates on the basis of a telephone survey conducted in 2008; and
- Ordering by internet for home delivery may also take a much larger share of the market in 2016 than the 2.95% for which allowance has been made. According to a

²⁰ *Milton Keynes Retail Capacity and Leisure Study* (2010), paragraph 4.45.

²¹ The latest available information on household spending patterns for such goods in *Milton Keynes Retail Capacity and Leisure Study* (2010), paragraph 4.6, shows that, of a mean household weekly convenience-goods spend (not including internet sales) of £85.72, £3.76 (4.4%) went to small local shops in 2008. This equates to 4.3% of total convenience-goods spend (internet sales included).

recent research report²², online grocery sales in 2011 accounted for 3.8% of total grocery sales in the UK. The same source sees online as the fastest-growing channel in UK grocery retailing, with its turnover set to double in the next five years and a market share of 6.0% forecast for 2016. Apart from Morrisons —whose launch of such a service is thought to be imminent—, all the major national food multiples now offer internet ordering of groceries with home delivery.

- 10.4 On optimal assumptions therefore (a hypothetical first-tier operator unaffected by competition from its own stores in the locality, no further restrictions on the traffic system around Cofferridge Close and a generous estimate of the proportion of convenience-goods spending available to the supermarket sector), the annual turnover of the proposed Cofferridge Close store in 2016 is forecast by the gravity model at between £6.1 million and £11.7 million, with a median value of £9.2 million (at 2011 price levels). This corresponds to an annual sales density of between £4,089 and £7,865 per square metre of convenience-goods floorspace (1,487 square metres²³), with a median value of £6,205.
- 10.5 To assess the viability of the proposed store for a first-tier convenience-goods retailer, these 2016 forecasts will now be compared with an industry benchmark for leading food multiples. The benchmark adopted is the average annual sales density per unit of convenience-goods floorspace achieved by Tesco, Sainsbury's, Morrison's and Waitrose in 2011 as recorded in their respective annual reports²⁴, increased by 0.33% per annum from 2011 to 2016 to allow for the forecast gradual rise in main supermarkets' sales densities.²⁵ This works out at £12,573 per square metre (at 2011 price levels). Multiplied by the convenience-goods floorspace of the proposed store, this produces a benchmark annual turnover of nearly £18.7 million for a supermarket of this size.

²² IGD, *Online Grocery Retailing* (2011).

²³ Net convenience-goods sales area estimated as 95% of net sales area applied for (1,565 sq. m.).

²⁴ Convenience-goods sales densities quoted in company reports for 2011: Tesco — £24.95 per sq. ft. per week = £13,965 per sq. m. per year; Sainsbury's — £20.04 per sq. ft. per week = £11,216.86 per sq. m. per year; Morrison's — £22.38 per sq. ft. per week = £12,526.61 per sq. m. per year; Waitrose — £1,093.00 per sq. ft. per year = £11,764.95 per sq. m. per year. Average of the four companies for 2011: £12,368.38.

²⁵ *Milton Keynes Retail Capacity Update* (2011), Table 2.5.

10.6 The comparison between the forecast annual turnover range for the proposed store with a first-tier operator and the benchmark for such an operator with a store of the size proposed is shown in **Figure 7**. Depending on scenario, the forecast turnover falls short of the benchmark by between 37% and 67%, with a median shortfall of about 51%.

10.7 A store of the size proposed on this site would not, therefore, be viable for a leading food multiple. If a store of this size were to be leased to a second-tier food retailer operating with lower cost levels and a lower benchmark, it would still not be viable because, with less competitive strength, its turnover would be correspondingly lower. The gravity model shows that, under any circumstances and no matter what type of operator is assumed, a food supermarket of this size on this site would be under-trading so severely as to be at risk of complete failure. It would not be sustainable.

10.8 On the other hand, it is also clear that maintaining the status quo in Cofferridge Close is not a promising option for the future. If the Cofferridge Close store remains at its present size and with its present operator, its market position will be weaker in 2016 than in 2011. This is the direct result of increased competition caused by the approved enlargement of Tesco Wolverton and by the building of the Western Expansion Area supermarket at the increased size recently approved. To simulate the consequences of maintaining the status quo, a further run of the gravity model has been made with the operating conditions and size of the Cofferridge Close store the same as at present and the committed sizes of all the other supermarkets included in this Assessment (and therefore taking account of the size commitments of Tesco Wolverton, Sainsbury Shenley and the Western Expansion Area supermarket). The results suggest that, at constant price levels, the Cofferridge Close store's turnover would be some 12% less in 2016 than in 2011. A reduction of this magnitude would jeopardise the viability —and ultimately the continued existence— of Stony Stratford's only mainstream food retailer, with significant knock-on effects for all other businesses in the town.

FIGURE 7: TURNOVER/BENCHMARK COMPARISON



10.9 Some increase in the size of the Cofferridge Close store would thus appear advisable, but this would have to be on an appropriate scale that offers a real prospect of viability. Using the gravity model to test the range of annual turnover and sales densities that a store operator might hope to achieve on the Cofferridge Close site in 2016 with various store sizes, the following results are obtained (at 2011 price levels):

NET CONVENIENCE-GOODS FLOORSPACE (SQ. M.)	ESTIMATED TURNOVER			ANNUAL SALES DENSITY PER SQ. M.		
	MINIMUM	MEDIAN	MAXIMUM	MINIMUM	MEDIAN	MAXIMUM
574 (actual)	£3.0 million	£4.7 million	£6.1 million	£5,157	£8,158	£10,632
631 (+ 10%)	£3.2 million	£5.0 million	£6.5 million	£5,057	£7,989	£10,346
689 (+ 20%)	£3.4 million	£5.4 million	£6.9 million	£4,964	£7,808	£10,085
746 (+ 30%)	£3.6 million	£5.7 million	£7.3 million	£4,877	£7,641	£9,846
804 (+ 40%)	£3.9 million	£6.0 million	£7.7 million	£4,795	£7,485	£9,625
861 (+ 50%)	£4.1 million	£6.3 million	£8.1 million	£4,719	£7,340	£9,421

10.10 It can be seen that sales density decreases as the size of the store is expanded. This is because, due to the fundamental demographic and competitive weaknesses of the site, turnover does not keep pace fully when floorspace is increased. The optimal size for the store will therefore be one which:

- is large enough to suit the operations of the fully-competitive food retailer that is needed to attract this volume of trade in a highly competitive market; and
- is small enough to offer a sales density that is compatible with that retailer's business model and can thus be operated viably.

10.11 All the sales densities calculated in paragraph 10.9 are below the average of £12,573 per square metre achieved by the four industry leaders mentioned in paragraph 10.5 above. However, some of the sales densities, especially at the bottom end of the range of floorspace increases, ought to be compatible with the benchmark of some of their lesser rivals²⁶, while offering an appropriate size for their operations.

²⁶ As demonstrated by the *Milton Keynes Retail Capacity and Leisure Study* (2010), Table 5.5, some national retail chains (e.g. the Co-op) have average sales densities barely half the level of that of the industry leaders.

- 10.12 On balance, therefore, a moderate increase (of, say, 20% or 30%) in the size of the Cofferridge Close store appears a judicious option. It should offer an attractive business opportunity to some of the lesser national supermarket multiples, with reasonable prospects of long-term viability. It would act as a proportionate counterweight to the increasing market dominance of an expanded Tesco Wolverton, compounded by the building of the Western Expansion Area store at its recently-approved larger size and by the recently-approved replacement of the Sainsbury store at Shenley by a much larger one. In so doing, it would help to retain trade in Stony Stratford for the town's other businesses.
- 10.13 Such an option would be preferable to allowing the Cofferridge Close store to decline under pressure of increased competition from nearby giant rivals.
- 10.14 It would certainly be far preferable to the disproportionate increase in the store's floorspace sought in the present application. Shown by the gravity model to be out of scale with its market, such a store —if ever approved and built— would be economically unsustainable. Its inevitable failure would leave Stony Stratford with a "white elephant" in the heart of its Conservation Area, and without any mainstream food retailer. This would inflict irreparable damage on the town, its residents and its businesses.

11.0 Summary and Conclusions

11.1 This Economic Sustainability Assessment has revealed the fundamental flaws in the business case for the proposed enlargement of the Cofferridge Close store:

- the demographics of its catchment area are too weak;
- the competition from nearby rival supermarkets is too strong; and
- for motorists, its access routes are too slow.

11.2 These factors combine to rule out any prospect of economic sustainability for a store of the size proposed on this site:

- In the most favourable hypothesis, the turnover that a leading national food multiple could achieve would be 37% short of the average that it would expect from a store of this size. But if the awkward archway that provides the site's sole vehicle access is considered to reduce its attraction for motor traffic, the shortfall on benchmark could be as much as 51% or even 67%. Still other factors, such as the foreseeable growth in grocery shopping by internet and at local convenience stores, and any new one-way restrictions on the streets round the site, could drive results down still further.
- For a second-tier operator with lower costs and a lower benchmark, a store of this size would still be unsustainable because, with less competitive strength, its turnover would be correspondingly lower.

11.3 No matter what type of operator is assumed, a food store of this size on this site would be under-trading so severely as to be at risk of complete failure.

11.4 In terms of market share, the proposed store could aspire to market dominance only in parts of the old town of Stony Stratford and in Calverton End. Its share in Galley Hill and Fullers' Slade is substantially weakened by the recent approval of applications to double the convenience-goods area of the planned Western Expansion Area store and to increase that of Sainsbury at Shenley more than six-fold. Thus, in the civil parish of Stony Stratford as whole (with a forecast population of only 7,800 in 2016), its market share would not exceed 22% to 36%, with a median value of 31%. In the sparsely populated rural area north, west and south of Stony Stratford, its share would average between 5% and 14%, with a median value of 10%. And it would be practically negligible in most of the urban area to the south, including the Western Expansion Area.

11.5 The reason for this weak market performance is the overpowering competitive force of larger supermarkets nearby, specifically:

- the Tesco store at Wolverton, which is barely five minutes away from Stony Stratford by bus or by car and now enjoys a two-thirds market share throughout the Stony Stratford/Wolverton area. Already more than twice the size of the proposed Cofferridge Close store, it has been granted permission to enlarge its convenience-goods floorspace to more than 3.4 times that size. This will erode the proposed store's market share even more sharply to the east and within Stony Stratford itself;
- the supermarket to be built – little more than five minutes' drive from Stony Stratford – in the Western Expansion Area, which will limit and erode the proposed Cofferridge Close store's market share to the south-east of the town. At its recently-approved enlarged size, this supermarket will be 2.7 times bigger, in terms of convenience-goods floorspace, than the proposed Cofferridge Close store. This will limit the proposed store's market share in the southern part of the civil parish of Stony Stratford; and
- the Waitrose stores at Buckingham and Towcester and the Tesco store at Buckingham, all of which, by virtue of their size and their proximity, would attract more custom from most of the rural area north, west and south of Stony Stratford than the proposed Cofferridge Close store.

11.6 Quite apart from the archway access problem, the proposed store's car-owning market – on which it would rely for more than 80% of its custom – is further limited by three other factors, all taken into account in the present Assessment:

- The slow access to the site. In contrast to its nearby rivals enjoying rapid access along the Milton Keynes grid-road system, Cofferridge Close can be reached only via a series of unclassified streets and junctions in a built-up area. This adds a few crucial extra minutes to the driving-time required to reach it from most directions, penalising the proposed store further in a highly competitive market.
- The fact that – unlike Tesco Wolverton, the future Western Expansion Area store and several other giant rivals – the Cofferridge Close site cannot offer a petrol filling station. This is a yet another handicap in a highly competitive market.
- The lack of any potential for pass-by or diverted traffic to supplement the proposed store's market base. These are ruled out by a highway layout that diverts through traffic well away from the town, on the opposite side from Cofferridge Close.

- 11.7 In short, taking account of demographics, competition and access, demand is far from adequate for a store of the size proposed. There is simply no need for it. The proposed store is vastly out of scale with its catchment area and, if approved and built, would not be economically sustainable. Its failure would leave Stony Stratford with a “white elephant” in the heart of its Conservation Area, and without any mainstream food retailer. This would inflict irreparable damage on the town, its residents and its businesses.
- 11.8 The Application fails therefore to present the sustainable development sought by the NPPF. The proposed store does not correspond to a localised need as required by local planning policy, and is out of scale with its catchment area. Its predictable failure would have significant adverse impact on the vitality of a town centre. The Application must accordingly be refused under NPPF paragraphs 12 and 27 and Local Plan Policy R1(iii).
- 11.9 Such is the conclusion reached on the basis of the tried and tested method of using a gravity model to forecast the proposed store’s share of the total convenience-goods spending “pot” available in its catchment area. The forecast is based firmly on official population forecasts, real store sizes, real travelling-times by car and by bus and the latest convenience-goods spending forecasts by Milton Keynes Council’s retail consultants. The model has been applied separately to the car-owning and non-car-owning segments of the market in many finely-defined population zones, and the results aggregated. Viability has been assessed by comparing the result to the latest real industry benchmarks.
- 11.10 However, running the same model to simulate the results of leaving the Cofferridge Close store unchanged shows that its viability will be threatened by increased competition from the enlarged Tesco Wolverton and by the planned Western Expansion Area supermarket at its recently-approved enlarged size.
- 11.11 A proportionate response to this problem might be a modest enlargement of the existing store, say by about 20% or 30%. Further runs of the model suggest that a store of this size would have reasonable prospects of sustainability. Such a store would also help to retain trade in Stony Stratford for the town’s other businesses. This would be a “smaller incremental increase to an existing facility, appropriate to the role of the centre it is located within”, compatible with the recommendation of the Retail Capacity Update (2011)²⁷.

²⁷ Milton Keynes Council Retail Capacity Update (2011), paragraph 4.39 iii).

APPENDIX 1 – INFORMATION ON GRAVITY MODELLING

1. The gravity model used in this Assessment derives from the later development of a concept first propounded by the US economist William J. Reilly in 1931. Reilly demonstrated empirically that two cities will attract retail trade from the same catchment area in approximately direct proportion to their population and inverse proportion to the square of the distance. This concept being closely parallel to Newton's law of universal gravitation, it became known by analogy as Reilly's Law of Retail Gravitation – whence the term 'gravity model'.
2. Reilly's concept was later expanded and improved by other economists, notably David L. Huff in the 1960s¹, who developed it into a probabilistic distribution model applicable to multiple consumer choices within a closed system. It now focused on the way that consumers are attracted to any of several shopping centres, for which retail floorspace was introduced as the index of attraction. Instead of taking the inverse square of the distance as in Reilly's equation, the power to which the distance was raised before taking its inverse was now allowed to vary, its precise value being established in each case by calibrating the model on known data.
3. Raising this power has the effect of weighting shopping patterns towards shorter distances and away from longer ones. Varying the parameter in this way allows the model to be fitted optimally to the characteristics of the market being analysed (the distances over which shoppers travel being shorter for convenience goods than for comparison goods, and shorter in urban areas with plenty of stores in proximity than in more remote rural areas) as well as to changing economic conditions (higher petrol prices and bus fares tending to increase consumer preference for shopping over shorter distances).
4. Further refinements of the gravity model include disaggregation by mode of travel (consumer choice of shopping centre being less constrained for car users than for users of public transport), the substitution of time for distance (as a more realistic measure of the parameter separating the consumer from his possible choice of

stores) and the possible introduction of further factors to make allowance for other elements affecting the pattern of competition (supermarkets with petrol filling stations and easy parking having more power of attraction for motorists than supermarkets without).

5. In this model, the probability that people from a given residential area will shop at a particular supermarket will be the attractiveness function of that supermarket compared to the sum of the attractiveness functions of all the supermarkets accessible to that residential area. In algebraic terms, the probability (Pr) can be written in the general form:

$$\text{Pr} \begin{bmatrix} \text{a resident of zone i} \\ \text{shopping in store j} \end{bmatrix} = \frac{F_j / t_{ij}^\gamma}{\sum_i F_j / t_{ij}^\gamma}$$

where:

F_j = floorspace of store j;

t_{ij} = travelling-time between zone i and store j; and

γ = a parameter whose value is established at calibration.

6. For greater precision, the model used in this Assessment is confined to supermarket shopping for convenience goods only, and is disaggregated by being applied separately to car-owners and to users of public transport.
7. Models of this type have been widely used in spatial demand analysis by retail specialists, supermarket chains and local authorities over the last half-century. Although, like all economic models, they represent a simplification of the real world and cannot take account of every factor affecting human behaviour, their results have been found broadly reliable.

¹ D.L. Huff, 'A probabilistic analysis of shopping centre trade areas', *Land Economics*, 39, (1963), pages 81–90.

APPENDIX 2 – POPULATION ZONES

(table continues on opposite page and on following pages)

Zone	Description	Source reference to ONS Neighbourhood Statistics geography: Lower Layer Super Output Area (& Output Area)	Surface area (hectares)	2001 census				Growth coefficient 2001-2011	2011 estimates							
				Population (Persons)	All Households (Households)	Households with no car or van (households)	Households with car or van		Population	All Households	Households with no car or van	Households with car or van	Estimated av. size of non-car-owning household	Estimated population in non-car-owning households	Estimated population in car-owning households	Estimated average size of car-owning household
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
							(6)-(7)		(5)/(9)	(6)/(9)	(7)/(9)	(11)-(12)		(12)/(14)	(10)-(15)	(16)/(13)
Sub-zones within zone 1																
1a	Stony Stratford, old (N.E.)	Milton Keynes 010C (00MGNW0037 only)	12	301	127	27	100	0.97806	294	124	26	98	1.68	44	250	2.55
1b	Stony Stratford, old (E.)	Milton Keynes 010C (00MGNW0038 only)	5	275	131	23	108	0.97806	269	128	22	106	1.68	37	232	2.19
1c	Stony Stratford, old (N.W.)	Milton Keynes 010C (00MGNW0039 only)	22	235	124	32	92	0.97806	230	121	31	90	1.68	52	178	1.98
1d	Stony Stratford, old (S.W.)	Milton Keynes 010C (00MGNW0041 only)	18	269	136	29	107	0.97806	263	133	28	105	1.68	47	216	2.06
1e	Stony Stratford, old (S.E.)	Milton Keynes 010C (00MGNW0045 only)	6	245	119	27	92	0.97806	240	116	26	90	1.68	44	196	2.18
1f	Stony Stratford, old (S.)	Milton Keynes 010C (00MGNW0047 only)	9	272	128	19	109	0.97806	266	125	19	106	1.68	32	234	2.21
Stony Stratford (civil parish)																
1	Stony Stratford, old town	Milton Keynes 010C (all) (sum of sub-zones 1a–1f)	72	1597	765	157	608	0.97806	1562	748	154	594	1.68	259	1303	2.19
2	Stony Stratford (northeast)	Milton Keynes 010B (all)	66	1564	662	152	510	0.97806	1530	647	149	498	1.68	251	1279	2.57
3	Galley Hill	Milton Keynes 010A (all)	45	1518	640	90	550	0.97806	1485	626	88	538	1.68	148	1337	2.49
4	Calverton End	Milton Keynes 019D (all except 00MGNW0024)	35	1437	636	109	527	0.97806	1405	622	107	515	1.68	180	1225	2.38
5	Fullers Slade	Milton Keynes 012B (all)	33	1451	476	162	314	0.97806	1419	466	158	308	1.68	266	1153	3.74
Sub-total zones 1-5			251	7,567	3,179	670	2,509		7,401	3,109	656	2,453		1,104	6,297	
Other urban																
6	Old Wolverton & Wolverton Mill	Milton Keynes 010D (all)	372	1530	603	70	533	1.06628	1631	643	75	568	1.74	130	1501	2.64
7	New Bradwell (west)	Milton Keynes 008D (all)	119	1496	721	206	515	1.06628	1595	769	220	549	1.74	382	1213	2.21
8	Wolverton (northeast)	Milton Keynes 008B (all)	21	1660	661	165	496	1.06628	1770	705	176	529	1.74	306	1464	2.77
9	Wolverton (southwest)	Milton Keynes 008A (all)	20	1576	619	139	480	1.06628	1680	660	148	512	1.74	257	1423	2.78
10	Wolverton (south)	Milton Keynes 008C (all)	54	1516	594	157	437	1.06628	1616	633	167	466	1.74	290	1326	2.85
11	Greenleys	Milton Keynes 012D (all)	46	1746	624	206	418	1.06628	1862	665	220	445	1.74	382	1480	3.33
12	Hodge Lea	Milton Keynes 012A (all)	71	1329	577	227	350	1.02384	1361	591	232	359	1.61	374	987	2.75
13	Two Mile Ash (west)	Milton Keynes 015D (all)	137	1508	587	38	549	1.02384	1544	601	39	562	1.61	63	1481	2.64
14	New Bradwell (east)	Milton Keynes 006D (all)	59	1512	618	210	408	1.04129	1574	644	219	425	1.78	391	1183	2.78
15	Bradville (north)	Milton Keynes 006A (all)	50	1578	588	192	396	1.08501	1712	638	208	430	1.70	353	1359	3.16
16	Bradville (south)	Milton Keynes 006B (all)	40	1590	632	113	519	1.08501	1725	686	123	563	1.70	209	1516	2.69
17	Bancroft	Milton Keynes 011D (all)	40	1378	517	57	460	1.08501	1495	561	62	499	1.70	105	1390	2.79
18	Blue Bridge	Milton Keynes 011C (all)	74	1425	613	53	560	1.08501	1546	665	58	607	1.70	99	1447	2.38
19	Stacey Bushes	Milton Keynes 012C (all)	42	1179	499	175	324	1.02384	1207	511	179	332	1.61	289	918	2.77
20	Stantonbury (south)	Milton Keynes 009D (all)	159	1516	702	214	488	1.08501	1645	762	232	530	1.70	394	1251	2.36
21	Heelands (north)	Milton Keynes 013A (all)	28	1571	637	129	508	1.06508	1673	678	137	541	1.67	228	1445	2.67
22	Heelands (south)	Milton Keynes 013B (all)	40	1503	607	237	370	1.06508	1601	647	252	395	1.67	420	1181	2.99
23	Bradwell (west)	Milton Keynes 011A (all)	46	1494	640	121	519	1.06508	1591	682	129	553	1.67	215	1376	2.49
24	Bradwell (southeast)	Milton Keynes 011B (all)	41	1684	621	75	546	1.06508	1794	661	80	581	1.67	133	1661	2.86
25	Bradwell Common (south)	Milton Keynes 013D (all)	73	1476	609	173	436	1.06508	1572	649	184	465	1.67	307	1265	2.72
26	Bradwell Common (north)	Milton Keynes 013C (all)	43	1661	629	61	568	1.06508	1769	670	65	605	1.67	108	1661	2.75
27	Conniburrow (north)	Milton Keynes 009A (all)	39	1502	591	190	401	1.14679	1722	678	218	460	1.70	371	1351	2.94
28	Conniburrow (south)	Milton Keynes 014A (all)	25	1554	612	233	379	1.14679	1782	702	267	435	1.70	454	1328	3.05
29	Wymbush	Milton Keynes 015B (all)	122	1236	632	117	515	1.02384	1265	647	120	527	1.61	194	1071	2.03
30	Two Mile Ash (east)	Milton Keynes 015C (all)	27	1292	517	86	431	1.02384	1323	529	88	441	1.61	142	1181	2.68
31	Great Holm (northeast)	Milton Keynes 015A (all)	37	1569	533	38	495	1.05404	1654	562	40	522	1.46	58	1596	3.06
32	Great Holm (southwest)	Milton Keynes 020C (all)	27	1498	614	93	521	1.05404	1579	647	98	549	1.46	143	1436	2.62
33	Loughton (north)	Milton Keynes 020A (all)	87	1499	604	95	509	1.05404	1580	637	100	537	1.46	146	1434	2.67
34	Crownhill	Milton Keynes 020D (all)	80	1510	627	104	523	1.05404	1592	661	110	551	1.46	161	1431	2.60
35	Shenley Church End (west)	Milton Keynes 019B (all)	48	1563	622	58	564	1.74820	2732	1087	101	986	1.77	179	2553	2.59
36	Shenley Church End (south)	Milton Keynes 019C (all)	68	1519	530	55	475	1.74820	2656	927	96	831	1.77	170	2486	2.99
37	Loughton (south)	Milton Keynes 020B (all)	172	1596	661	89	572	1.74820	2790	1156	156	1000	1.77	277	2513	2.51
38	Shenley Lodge (north)	Milton Keynes 025D (all)	41	1537	635	83	552	1.35322	2080	859	112	747	1.83	205	1875	2.51
39	Shenley Lodge (south)	Milton Keynes 026B (all)	66	1636	732	215	517	1.35322	2214	991	291	700	1.83	534	1680	2.40
40	Shenley Brook End (north)	Milton Keynes 025B (all)	35	1648	598	59	539	1.35322	2230	809	80	729	1.83	147	2083	2.86
41	Grange Farm	Milton Keynes 019A (all except area within zone 42)	394	1744	454	86	368	1.74820	3049	794	150	644	1.77	266	2783	4.32
42	WEA area 10.1-10.3		228	0	0	0	0		0	0	0	0		0	0	
43	WEA area 11		124	0	0	0	0		0	0	0	0		0	0	
Sub-total zones 6-43			3,195	54,831	21,860	4,619	17,241		64,211	25,407	5,232	20,175		8,882	55,329	

APPENDIX 2 – POPULATION ZONES

(continued from opposite page. Table continues on following pages)

Zone	Description	Growth coefficient 2001-2016	2016 forecasts													Sources of cols 9, 14, 18 & 23 (see end tables)
			Population	All Households	Households with no car or van	Households with car or van	Estimated av. size of non-car-owning household	Estimated population in non-car-owning households	Estimated population in car-owning households	Estimated average size of car-owning household	Population density (persons per hectare)	Per-capita convenience-goods spending	Total convenience- goods spending	(19)*(28)		
(1)	(2)	(18)	(19) (5)*(18)	(20) (6)*(18)	(21) (7)*(18)	(22) (20)*(21)	(23)	(24) (21)*(23)	(25) (19)-(24)	(26) (25)/(22)	(27) (19)/(4)	(28)	(29)	(30)		
Sub-zones within zone 1																
1a	Stony Stratford, old (N.E.)	1.03093	310	131	28	103	1.68	47	263	2.55	26	£1,983	£614,730	A		
1b	Stony Stratford, old (E.)	1.03093	284	135	24	111	1.68	40	244	2.20	57	£1,983	£563,172	A		
1c	Stony Stratford, old (N.W.)	1.03093	242	128	33	95	1.68	56	186	1.96	11	£1,983	£479,886	A		
1d	Stony Stratford, old (S.W.)	1.03093	277	140	30	110	1.68	51	226	2.05	15	£1,983	£549,291	A		
1e	Stony Stratford, old (S.E.)	1.03093	253	123	28	95	1.68	47	206	2.17	42	£1,983	£501,699	A		
1f	Stony Stratford, old (S.)	1.03093	280	132	20	112	1.68	34	246	2.20	31	£1,983	£555,240	A		
Stony Stratford (civil parish)																
1	Stony Stratford, old town	1.03093	1646	789	162	627	1.68	273	1373	2.19	23	£1,983	£3,264,018	A		
2	Stony Stratford (northeast)	1.03093	1612	682	157	525	1.68	264	1348	2.57	24	£1,983	£3,196,596	A		
3	Galley Hill	1.03093	1565	660	93	567	1.68	157	1408	2.48	35	£1,983	£3,103,395	A		
4	Calverton End	1.03093	1481	656	112	544	1.68	189	1292	2.38	42	£1,983	£2,936,823	A		
5	Fullers Slade	1.03093	1496	491	167	324	1.68	281	1215	3.75	45	£1,983	£2,966,568	A		
Sub-total zones 1-5			7,800	3,278	691	2,587		1,164	6,636							
Other urban																
6	Old Wolverton & Wol'n Mill	1.18745	1817	716	83	633	1.74	144	1673	2.64	5	£1,983	£3,603,111	B		
7	New Bradwell (west)	1.18745	1776	856	245	611	1.74	426	1350	2.21	15	£1,983	£3,521,808	B		
8	Wolverton (northeast)	1.18745	1971	785	196	589	1.74	341	1630	2.77	94	£1,983	£3,908,493	B		
9	Wolverton (southwest)	1.18745	1871	735	165	570	1.74	287	1584	2.78	94	£1,983	£3,710,193	B		
10	Wolverton (south)	1.18745	1800	705	186	519	1.74	323	1477	2.85	33	£1,983	£3,569,400	B		
11	Greenleys	1.18745	2073	741	245	496	1.74	426	1647	3.32	45	£1,983	£4,110,759	B		
12	Hodge Lea	1.03912	1381	600	236	364	1.61	381	1000	2.75	19	£1,973	£2,724,713	C		
13	Two Mile Ash (west)	1.03912	1567	610	39	571	1.61	63	1504	2.63	11	£1,959	£3,069,753	C		
14	New Bradwell (east)	1.07720	1629	666	226	440	1.78	403	1226	2.79	28	£1,945	£3,168,405	D		
15	Bradville (north)	1.09620	1730	645	210	435	1.70	357	1373	3.16	35	£1,945	£3,364,850	E		
16	Bradville (south)	1.09620	1743	693	124	569	1.70	211	1532	2.69	44	£1,945	£3,390,135	E		
17	Bancroft	1.09620	1511	567	62	505	1.70	105	1406	2.78	38	£1,945	£2,938,895	E		
18	Blue Bridge	1.09620	1562	672	58	614	1.70	99	1463	2.38	21	£1,973	£3,081,826	E		
19	Stacey Bushes	1.03912	1225	519	182	337	1.61	294	931	2.76	29	£1,945	£2,382,625	C		
20	Stantonbury (south)	1.09620	1662	770	235	535	1.70	399	1263	2.36	10	£1,945	£3,232,590	E		
21	Heelands (north)	1.07573	1690	685	139	546	1.67	232	1458	2.67	60	£1,945	£3,287,050	F		
22	Heelands (south)	1.07573	1617	653	255	398	1.67	425	1192	2.99	40	£1,945	£3,145,065	F		
23	Bradwell (west)	1.07573	1607	688	130	558	1.67	217	1390	2.49	35	£1,973	£3,170,611	F		
24	Bradwell (southeast)	1.07573	1812	668	81	587	1.67	135	1677	2.86	44	£1,973	£3,575,076	F		
25	Bradwell Common (south)	1.07573	1588	655	186	469	1.67	310	1278	2.72	22	£1,973	£3,133,124	F		
26	Bradwell Common (north)	1.07573	1787	677	66	611	1.67	110	1677	2.74	42	£1,973	£3,525,751	F		
27	Conniburrow (north)	1.16863	1755	691	222	469	1.70	378	1377	2.94	45	£1,945	£3,413,475	G		
28	Conniburrow (south)	1.16863	1816	715	272	443	1.70	463	1353	3.05	73	£1,945	£3,532,120	G		
29	Wymbush	1.03912	1284	657	122	535	1.61	197	1087	2.03	11	£1,973	£2,533,332	C		
30	Two Mile Ash (east)	1.03912	1343	537	89	448	1.61	144	1199	2.68	50	£1,973	£2,649,739	C		
31	Great Holm (northeast)	1.07077	1680	571	41	530	1.46	60	1620	3.06	45	£1,973	£3,314,640	H		
32	Great Holm (southwest)	1.07077	1604	657	100	557	1.46	146	1458	2.62	59	£1,973	£3,164,692	H		
33	Loughton (north)	1.07077	1605	647	102	545	1.46	149	1456	2.67	18	£1,827	£2,932,335	H		
34	Crownhill	1.07077	1617	671	111	560	1.46	162	1455	2.60	20	£1,827	£2,954,259	H		
35	Shenley Church End (west)	2.19292	3428	1364	127	1237	1.77	225	3203	2.59	71	£1,919	£6,578,332	I		
36	Shenley Church End (south)	2.19292	3331	1162	121	1041	1.77	215	3116	2.99	49	£1,919	£6,392,189	I		
37	Loughton (south)	2.19292	3500	1450	195	1255	1.77	346	3154	2.51	20	£1,827	£6,394,500	I		
38	Shenley Lodge (north)	1.48109	2276	940	123	817	1.83	226	2050	2.51	56	£1,919	£4,367,644	J		
39	Shenley Lodge (south)	1.48109	2423	1084	318	766	1.83	583	1840	2.40	37	£1,919	£4,649,737	J		
40	Shenley Brook End (north)	1.48109	2441	886	87	799	1.83	160	2281	2.85	70	£1,919	£4,684,279	J		
41	Grange Farm	2.19292	3824	996	189	807	1.77	335	3489	4.32	10	£1,919	£7,338,256	I		
42	WEA area 10.1-10.3		950	380	80	300	1.68	135	815	2.72	4	£1,973	£1,874,350			
43	WEA area 11		2550	1020	215	805	1.68	363	2187	2.72	21	£1,973	£5,031,150			
Sub-total zones 6-43			72,846	28,734	5,864	22,870		9,975	62,871							

SOURCE OF POPULATION FORECASTS FOR ZONES 42 & 43
(WESTERN EXPANSION AREA)

The population forecasts for 2016 (column 19) for zones 42 and 43 are the latest (March 2012) Milton Keynes Observatory population projections for WEA/SCE and WEA/Calverton respectively for that year. Total household numbers for these zones (column 20) have been estimated on the basis of an assumed average household size of 2.5 persons (the average for zones 1–41). The breakdown between car-owning and non-car-owning households in these zones has been estimated using the same average household size for each category as the average for zones 1–41.

SOURCE OF PER-CAPITA SPENDING FORECASTS
(COLUMN 28 OF TABLE)

The figures in this column are for per capita convenience-goods spending at supermarkets at 2011 price levels. They are derived from the total per capita convenience-goods spending estimates for 2016 given by the Milton Keynes Retail Capacity Update (2011) spreadsheet 2 for the area containing the zone in question. These have been reduced by 4.4% to make allowance for the proportion of the total household convenience-goods spend in the Milton Keynes area that goes to small local shops (cf. Milton Keynes Retail Capacity and Leisure Study, para. 4.6). The data for total convenience-goods spending already make allowance for 2.95% of it to be by internet (cf. Milton Keynes Retail Capacity and Leisure Study, para. 4.45).

Zones in this Assessment correspond as follows to zones in the MK Retail Capacity Study:

CATCHMENT AREA ASSESSMENT	MK RETAIL CAPACITY STUDY
Zones 1–11	Zone 7
Zones 12, 13*, 18, 23–26, 29–32, 42–43	Zone 6
Zones 13*, 14–17, 27–28	Zone 5
Zones 33–34, 37	Zone 3
Zones 35–36, 38–41	Zone 2
Zones 44, 47, 50–51, 52*, 56–59	Zone 16
Zones 45–46	Zone 24
Zone 48	Zone 14
Zones 49, 52*, 53–55	Zone 15

* Zones 13 & 52 each form part of two zones in the MK Study. In each case, the average of the two MK Study zones has been used.

APPENDIX 2 – POPULATION ZONES (continued)

(table continued from previous pages)

Zone	Description	Source reference to ONS Neighbourhood Statistics geography: Lower Layer Super Output Area (& Output Area)	Surface area (hectares)	2001 census				Growth coefficient 2001-2011	2011 estimates							
				Population (Persons)	All Households (Households)	Households with no car or van (households)	Households with car or van		Population	All Households	Households with no car or van	Households with car or van	Estimated av. size of non-car-owning household	Estimated population in non-car-owning households	Estimated population in car-owning households	Estimated average size of car-owning household
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
							(6)-(7)		(5)*(9)	(6)*(9)	(7)*(9)	(11)-(12)		(12)*(14)	(10)-(15)	(16)/(13)
Rural																
44	Calverton	Milton Keynes 019D (00MGNW0024 only, less area within zones 42 & 43)	550	177	77	10	67	1.69181	299	130	17	113	1.43	24	275	2.43
45	Whaddon	Aylesbury Vale 003A (11UBHF0008 only)	1026	428	179	18	161	1.00356	430	180	18	162	1.29	23	407	2.51
46	Nash	Aylesbury Vale 003A (11UBHF0005 only)	502	425	149	12	137	1.00356	427	150	12	138	1.29	16	411	2.98
47	Beachampton	Aylesbury Vale 001E (11UBHK0003 only)	619	147	59	4	55	1.06907	157	63	4	59	1.31	5	152	2.58
48	Thornton	Aylesbury Vale 001E (11UBHK0012 only)	839	198	57	0	57	1.06907	212	61	0	61	—	0	212	3.48
49	Leckhampstead	Aylesbury Vale 001E (11UBHK0004 only)	1040	186	76	4	72	1.06907	199	81	4	77	1.31	5	194	2.52
50	Wicken	S. Northants 008B (34UGGX0010 only)	939	299	129	17	112	1.25788	376	162	21	141	1.31	27	349	2.48
51	Deanshanger	S. Northants 008C (all) & 008B (34UGGX0003, 0005 & 0008 only)	344	2563	955	109	846	1.25788	3224	1201	137	1064	1.38	190	3034	2.85
52	Puxley	S. Northants 008B (34UGGX0006 only)	584	337	122	6	116	1.25788	424	153	8	145	1.38	11	413	2.85
53	Potterspury	S. Northants 008D (all except 34UGHR0006 & 0007)	949	1394	588	73	515	1.25788	1753	740	92	648	1.35	124	1629	2.51
54	Yardley Gobion	S. Northants 003D (34UGGX0003, 0004, 0005 & 0006 only)	550	1329	500	44	456	1.56953	2086	785	69	716	1.44	99	1987	2.78
55	Grafton Regis	S. Northants 003D (34UGGX0002 only)	929	248	97	7	90	1.56953	389	152	11	141	1.29	14	375	2.66
56	Cosgrove	S. Northants 008A (34UGGX0001 & 0002 only)	688	480	206	23	183	1.25788	604	259	29	230	1.35	39	565	2.46
57	Old Stratford & Passenham	S. Northants 008A(34UGGX0003, 0004, 0005, 0006 & 0007 only)	434	1544	642	71	571	1.25788	1942	808	89	719	1.45	129	1813	2.52
58	Castletorpe (southwest)	Milton Keynes 002B (00MGNK0001 only)	72	311	135	19	116	1.03306	321	139	20	119	1.41	28	293	2.46
59	Haversham (southwest)	Milton Keynes 002B (00MGNK0012 & 0013 only)	82	552	227	28	199	1.86800	1031	424	52	372	1.29	67	964	2.59
Sub-total zones 44-59			10,147	10,618	4,198	445	3,753		13,874	5,488	583	4,905		801	13,073	
TOTAL ZONES 1-59			13,593	73,016	29,237	5,734	23,503		85,486	34,004	6,471	27,533		10,787	74,699	

SOURCES OF POPULATION GROWTH COEFFICIENTS 2001-2011 & 2001-2016
(COLUMNS 9 AND 18 OF TABLE ABOVE)

Reference in column 30	Source	MK civil parish	ONS Lower Layer Super Output Area	2001 census	MKO 2011 estimate	MKO 2016 forecast	ONS 2010 estimate	2011 extrapolation	2016 extrapolation	Coefficient 2001-2011	Coefficient 2001-2016
A	MKO	Stony Stratford CP		7566	7400	7800				0.97806	1.03093
B	MKO	Wolverton & Greenleys CP		8253	8800	9800				1.06628	1.18745
C	MKO	Bradwell Abbey CP		6544	6700	6800				1.02384	1.03912
D	MKO	New Bradwell CP		2785	2900	3000				1.04129	1.07720
E	MKO	Stantonbury CP		8940	9700	9800				1.08501	1.09620
F	MKO	Bradwell CP		9389	10000	10100				1.06508	1.07573
G	MKO	Great Linford CP		18312	21000	21400				1.14679	1.16863
H	MKO	Loughton CP		5977	6300	6400				1.05404	1.07077
I	MKO	Shenley Church End CP		6521	11400	14300				1.74820	2.19292
J	MKO	Shenley Brook End CP		18770	25400	27800				1.35322	1.48109
K	ONS		Milton Keynes 019	6440			10508	10895	13837	1.69181	2.14856
L	ONS		Aylesbury Vale 003	5259			5276	5278	5286	1.00356	1.00518
M	ONS		Aylesbury Vale 003	5259			5276	5278	5286	1.00356	1.00518
N	ONS		Aylesbury Vale 001	8281			8801	8853	9126	1.06907	1.10202
O	ONS		Aylesbury Vale 001	8281			8801	8853	9126	1.06907	1.10202
P	ONS		Aylesbury Vale 001	8281			8801	8853	9126	1.06907	1.10202
Q	ONS		South Northants 008	7199			8888	9055	10051	1.25788	1.39614
R	ONS		South Northants 008	7199			8888	9055	10051	1.25788	1.39614
S	ONS		South Northants 008	7199			8888	9055	10051	1.25788	1.39614
T	ONS		South Northants 003	8949			13597	14046	17240	1.56953	1.92644
U	ONS		South Northants 003	8949			13597	14046	17240	1.56953	1.92644
V	ONS		South Northants 008	7199			8888	9055	10051	1.25788	1.39614
W	ONS		South Northants 008	7199			8888	9055	10051	1.25788	1.39614
X	MKO	Castletorpe CP		968	1000	1100				1.03306	1.13636
Y	MKO	Haversham-cum-Little Linford CP		803	1500	2500				1.86800	3.11333

(table continued from previous pages)

APPENDIX 2 – POPULATION ZONES (continued)

Zone	Description	Growth coefficient 2001-2016	2016 forecasts											Sources of cols 9, 14, 18 & 23 (see end tables)
			Population	All Households	Households with no car or van	Households with car or van	Estimated av. size of non-car-owning household	Estimated population in non-car-owning households	Estimated population in car-owning households	Estimated average size of car-owning household	Population density (persons per hectare)	Per-capita convenience-goods spending	Total convenience-goods spending	
(1)	(2)	(18)	(19) (5)*(18)	(20) (6)*(18)	(21) (7)*(18)	(22) (20)-(21)	(23)	(24) (21)*(23)	(25) (19)-(24)	(26) (25)/(22)	(27) (19)/(4)	(28)	(29) (19)*(28)	(30)
Rural														
44	Calverton	2.14856	380	165	21	144	1.43	30	350	2.43	1	£1,865	£708,700	K
45	Whaddon	1.00518	430	180	18	162	1.29	23	407	2.51	0	£1,898	£816,140	L
46	Nash	1.00518	427	150	12	138	1.29	16	411	2.98	1	£1,898	£810,446	M
47	Beachampton	1.10202	162	65	4	61	1.31	5	157	2.57	0	£1,865	£302,130	N
48	Thornton	1.10202	218	63	0	63	—	0	218	3.46	0	£1,939	£422,702	O
49	Leckhampstead	1.10202	205	84	4	80	1.31	5	200	2.50	0	£1,836	£376,380	P
50	Wicken	1.39614	417	180	24	156	1.31	31	386	2.47	0	£1,865	£777,705	Q
51	Deanshanger	1.39614	3578	1333	152	1181	1.38	210	3368	2.85	10	£1,865	£6,672,970	R
52	Puxley	1.39614	470	170	8	162	1.38	11	459	2.83	1	£1,851	£869,970	R
53	Potterspurty	1.39614	1946	821	102	719	1.35	138	1808	2.51	2	£1,836	£3,572,856	S
54	Yardley Gobion	1.92644	2560	963	85	878	1.44	122	2438	2.78	5	£1,836	£4,700,160	T
55	Grafton Regis	1.92644	478	187	13	174	1.29	17	461	2.65	1	£1,836	£877,608	U
56	Cosgrove	1.39614	670	288	32	256	1.35	43	627	2.45	1	£1,865	£1,249,550	V
57	Old Stratford & Passenham	1.39614	2156	896	99	797	1.45	143	2013	2.53	5	£1,865	£4,020,940	W
58	Castlethorpe (southwest)	1.13636	353	153	22	131	1.41	31	322	2.46	5	£1,865	£658,345	X
59	Haversham (southwest)	3.11333	1719	707	87	620	1.29	112	1607	2.59	21	£1,865	£3,205,935	Y
Sub-total zones 44-59			16,169	6,405	683	5,722		937	15,232					

TOTAL ZONES 1-59	96,815	38,417	7,238	31,179	12,076	84,739
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ESTIMATION OF AVERAGE SIZE OF NON-CAR-OWNING HOUSEHOLDS (COLUMNS 14 AND 23 OF TABLE ABOVE)

Reference in column 30	MK civil parish	2001 census				Estimated population in:				Estimated average size of households without car
		All-pensioner households without car	One-family households with children, without car	Other households without car	Total households without car	All-pensioner households without car	One-family households with children, without car	Other households without car	All households without car	
A	Stony Stratford CP	333	138	199	670	416	414	299	1129	1.68
B	Wolverton and Greenleys CP	336	182	277	795	420	546	416	1382	1.74
C	Bradwell Abbey CP	223	86	334	643	279	258	501	1038	1.61
D	New Bradwell CP	134	90	134	358	168	270	201	639	1.78
E	Stantonbury CP	300	143	260	703	375	429	390	1194	1.70
F	Bradwell CP	371	150	275	796	464	450	413	1326	1.67
G	Great Linford CP	644	299	479	1422	805	897	719	2421	1.70
H	Loughton CP	189	24	81	294	236	72	122	430	1.46
I	Shenley Church End CP	107	77	140	324	134	231	210	575	1.77
J	Shenley Brook End CP	322	268	371	961	403	804	557	1763	1.83
K	Calverton CP	9	1	0	10	11	3	0	14	1.43
L	Whaddon CP	15	0	3	18	19	0	5	23	1.29
M	Nash CP	10	0	2	12	13	0	3	16	1.29
N	Beachampton CP	3	0	1	4	4	0	2	5	1.31
O	Thornton CP	0	0	0	0	0	0	0	0	—
P	Leckhampstead CP	3	0	1	4	4	0	2	5	1.31
Q	Wicken CP	13	0	4	17	16	0	6	22	1.31
R	Deanshanger CP	90	6	21	117	113	18	32	162	1.38
S	Potterspurty CP	61	3	9	73	76	9	14	99	1.35
T	Yardley Gobion CP	29	3	12	44	36	9	18	63	1.44
U	Grafton Regis CP	6	0	1	7	8	0	2	9	1.29
V	Cosgrove CP	14	0	9	23	18	0	14	31	1.35
W	Old Stratford CP	45	5	21	71	56	15	32	103	1.45
X	Castlethorpe CP	33	3	6	42	41	9	9	59	1.41
Y	Haversham-cum-Little Linford CP	30	0	5	35	38	0	8	45	1.29

Notes to table at left

The estimated average size of non-car-owning household in each civil parish is based on separate estimates of the population living in each type of non-car-owning household in that parish:

- a All-pensioner households (lone pensioners and all-pensioner couples, and predominantly the former): number of such households in the 2001 census x 1.25
- b One-family households (single parents and couples) with children: number of such households in the 2001 census x 3.0
- c Other households (single people and couples without children): number of such households in the 2001 census x 1.5

Average size of households without car = a + b + c / total number of households without car.

APPENDIX 3 – SUPERMARKETS WITHIN AND AROUND THE STUDY AREA

Ref. to Fig. 3	Operator	Address	Net convenience-goods sales area (sq. m.)			Main characteristics					Notes
			Existing	Approved	Applied for	Petrol filling-station	24-hour opening	Pharmacy	Optician	Substantial offer of comparison goods	
CC	Budgens	Cofferidge Close, Stony Stratford, MK11 1BY	574		1,487	—	—	—	—	—	A
1	Tesco	McConnell Drive, Wolverton, MK12 5RJ	3,159	5,116		✓	✓	—	—	✓	B
2	Asda	1-2 Glyn Square, Wolverton, MK12 5JQ	499			—	—	—	—	✓	C
3	[?]	[Western Expansion Area]	—	4,000		✓	[?]	[?]	[?]	[?]	D
4a	Sainsbury	1 Benbow Court, Shenley Church End, MK5 6JG	276			—	—	—	—	—	E
4b	Sainsbury	2 Engaine Drive, Shenley Church End, MK5 6JU	—	1,801		—	—	—	—	—	E
5	Aldi	1 Bradwell Common Boulevard, Bradwell Common, MK13 8BF	650			—	—	—	—	—	F
6	Marks & Spencer	2 Sunset Walk, Saxon Gate East, Central Milton Keynes, MK9 3PD	2,070			—	—	—	—	✓	C
7	Sainsbury	799 Witan Gate, Central Milton Keynes, MK9 2FW	5,120			—	—	✓	—	—	C
8	Waitrose	728 Midsummer Boulevard, Central Milton Keynes, MK9 3NJ	1,626			—	—	—	—	—	G
9	Lidl	Oldbrook Boulevard, Oldbrook, MK6 2YA	659			—	—	—	—	—	C
10	Asda	Bletcham Way, Denbigh, MK1 1QB	5,442			✓	✓	✓	✓	✓	C
11	Tesco	Watling Street, Bletchley, MK1 1DD	2,649			✓	✓	✓	✓	✓	C
12	Sainsbury	Brunel Centre, Bletchley, MK2 2JS	1,388			—	—	—	—	—	C
13	Morrison	4 Barnsdale Drive, Westcroft, MK4 4DD	3,689			✓	—	—	—	—	C
14	Waitrose	Meadow Walk, High Street, Buckingham, ML18 1RS	920			—	—	—	—	—	H
15	Tesco	London Road, Buckingham, MK18 1AB	3,000			✓	✓	✓	—	✓	I
16	Waitrose	Water Lane, Towcester, NN12 6HZ	2,040			—	—	—	—	—	J
17	Tesco	Tickford Street, Newport Pagnell	—	1,767		—	—	—	—	—	K
18	Marks & Spencer	1b Winchester Circle, Kingston, MK10 0BA	2,000			—	—	—	—	✓	L
19	Tesco	1 Winchester Circle, Kingston, MK10 0AH	4,715			✓	✓	✓	✓	✓	C

Notes to Appendix 3

- A Existing net convenience-goods sales area estimated as 95% of net sales area (604 sq. m. — source: Budgens). Applied-for net convenience-goods sales area estimated as 95% of net sales area applied for (1,565 sq. m. — source: planning application).
- B Existing net convenience-goods sales area as stated in Milton Keynes Retail Capacity and Leisure Study, page 93. Approved net convenience-goods sales area as stated in Milton Keynes Council Retail Capacity Update, page 9.
- C Existing net convenience-goods sales area as stated in Milton Keynes Retail Capacity and Leisure Study, page 93.
- D Net convenience-goods sales area increased to 4,000 sq. m. by decision of 6/2/2012 in planning application 11/01685/MKPCO (from 1,950 sq. m. originally planned).
- E Line 4a: existing net convenience-goods sales area estimated as 100% of net sales area (276 sq. m. — source: planning application). Line 4b: approved net convenience-goods sales area estimated as 90% of total sales area (2,001 sq. m. — source: planning application). When built, the store in line 4b will replace the store in line 4a.
- F Existing net convenience-goods sales area estimated as 68% of net sales area (960 sq.m. — source: Aldi).
- G Existing net convenience-goods sales area estimated as 100% of net sales area (2,040 sq.m. — source: Waitrose).
- H Existing net convenience-goods sales area estimated as 100% of net sales area (920 sq.m. — source: Waitrose).
- I Existing net convenience-goods sales area as stated in Aylesbury Vale Retail Capacity Study, Appendix 2, Table 10.
- J Existing net convenience-goods sales area estimated as 100% of net sales area (2,040 sq.m. — source: Waitrose).
- K Approved net convenience-goods sales area as stated in Milton Keynes Retail Capacity and Leisure Study, page 93.
- L Existing net convenience-goods sales area estimated.

APPENDIX 4 – DRIVING-TIMES

Zone	Reference point	Cofferdge Cl. Stony Stratford MK11 1BY	Tesco Wolverton MK12 5RJ	Asda Wolverton MK12 5JQ	WEA Zone 10	Sainsbury Shenley Ch. End MK15 6JG/6JU	Aldi Bradwell Common MK13 8BF	Marks & Spencer MK9 3PD	Sainsbury MK9 2FW	Waitrose MK9 3NJ	Lidl Oldbrook MK6 2YA	Asda Denbigh MK1 1QB	Tesco Blechley MK1 1DD	Sainsbury Blechley MK2 2JS	Morrisons Westcroft MK4 4DD	Waitrose Buckingham MK18 1RS	Tesco Buckingham MK18 1AB	Waitrose Towcester NN12 6HZ	Tesco Newport Pagnell MK16 9AW	Marks & Spencer Kingston MK10 0BA	Tesco Kingston MK10 0AH
1a	MK11 1HT	3	5	7	8	9	10	11	11	12	12	12	13	16	14	15	15	15	14	16	16
1b	MK11 1EB	3	4	6	7	8	9	10	10	11	11	11	12	15	13	15	16	15	13	15	15
1c	MK11 1AT	2	6	8	8	9	11	12	11	12	13	12	13	16	14	14	15	14	15	16	16
1d	MK11 1BL	2	7	8	8	9	11	13	13	13	12	13	15	17	14	16	16	16	15	17	17
1e	MK11 1JF	2	5	6	6	7	9	11	10	11	10	11	12	15	12	15	16	15	13	15	15
1f	MK11 1LT	2	6	7	6	8	9	11	11	11	11	12	13	15	12	16	17	16	14	15	16
2	MK11 1DJ	4	4	5	7	8	9	10	10	11	11	11	12	15	13	15	16	15	13	15	15
3	MK11 1NZ	4	5	6	5	6	8	10	10	10	9	11	12	14	11	16	16	16	13	14	14
4	MK11 1ET	2	6	7	6	8	9	11	11	12	11	12	13	16	13	15	16	17	14	15	16
5	MK11 2BB	5	6	5	5	6	8	9	9	9	9	10	11	13	11	17	18	17	12	13	14
6	MK12 5PE	6	2	4	7	8	8	9	9	10	11	10	11	13	13	16	17	16	12	13	14
7	MK13 0BE	10	3	3	8	9	6	8	8	9	10	11	12	15	14	20	20	20	10	13	13
8	MK12 5DQ	8	2	2	9	10	8	10	10	10	12	11	12	15	15	18	19	18	12	15	14
9	MK12 5AX	7	2	3	8	9	8	10	10	11	12	11	12	15	15	18	18	17	12	14	15
10	MK12 5DT	8	3	3	7	8	8	9	9	9	10	9	11	13	13	18	19	18	11	13	13
11	MK12 6AW	6	5	4	5	6	7	8	8	8	9	9	10	12	11	17	18	17	11	12	12
12	MK12 6JF	7	6	5	6	7	7	8	8	8	10	9	10	12	12	17	18	17	11	12	12
13	MK8 8DT	7	7	7	3	4	6	8	7	8	7	9	9	12	9	17	18	17	11	12	12
14	MK13 0ES	11	4	4	8	9	6	8	9	8	10	11	12	15	14	20	21	20	10	13	12
15	MK13 7DB	11	6	6	7	8	6	6	7	6	9	10	11	14	13	19	20	19	8	11	10
16	MK13 7AY	11	6	6	7	8	5	5	6	6	8	10	11	13	13	19	19	18	7	10	10
17	MK13 7JN	9	4	4	6	7	4	6	7	7	8	9	10	13	12	18	19	18	8	11	11
18	MK13 0LB	7	3	4	6	7	4	6	7	7	8	9	10	13	12	17	18	17	8	11	11
19	MK12 6HA	7	4	4	6	7	6	8	7	8	9	8	9	12	12	17	18	17	10	12	12
20	MK14 6AS	10	5	7	6	8	5	5	6	5	8	9	11	13	13	18	19	18	7	10	9
21	MK13 7NB	11	6	6	7	8	5	5	6	5	8	9	10	13	13	19	19	18	7	10	9
22	MK13 7QS	10	5	6	4	5	3	4	5	5	6	8	9	12	10	18	19	18	9	10	9
23	MK13 9HU	10	6	6	6	7	5	7	7	7	9	9	11	13	12	18	19	18	9	12	12
24	MK13 9BD	10	6	6	5	6	4	6	6	6	8	9	10	13	11	19	19	18	9	11	10
25	MK13 8BN	11	7	5	6	5	2	3	3	4	6	7	9	11	10	18	19	18	8	8	8
26	MK13 8DN	10	6	6	5	6	2	4	4	5	6	8	10	12	11	18	19	18	8	9	9
27	MK14 7DY	11	6	6	5	6	4	3	4	4	7	8	9	11	12	19	20	19	7	8	8
28	MK14 7BJ	12	7	8	7	6	4	3	4	3	6	7	8	11	11	19	20	19	8	8	7
29	MK8 8AP	8	6	6	4	5	5	7	7	8	9	8	9	12	10	16	16	16	10	12	12
30	MK8 8ET	8	7	6	3	4	4	6	6	7	7	9	9	12	9	17	17	17	10	11	11
31	MK8 9EJ	9	7	8	4	3	5	5	5	6	7	7	8	10	8	17	18	17	11	11	10
32	MK8 9EE	8	8	8	3	3	6	7	6	7	6	8	8	11	8	19	19	18	12	11	12
33	MK5 8AS	10	8	9	5	4	6	7	7	8	7	8	9	12	9	19	19	19	12	12	12
34	MK5 6EQ	9	9	9	4	1	6	7	5	7	5	7	7	10	8	18	19	18	12	10	11
35	MK8 0DJ	10	9	9	4	4	7	7	7	8	7	9	9	11	7	19	18	19	13	11	12
36	MK5 6HT	10	11	10	5	3	8	7	5	7	5	7	9	7	7	20	19	20	13	9	10
37	MK5 8EH	10	9	10	5	3	7	6	4	6	4	6	7	9	7	20	19	20	12	9	9
38	MK5 7BB	11	11	11	6	3	8	8	5	7	5	6	6	9	7	20	18	20	13	9	10
39	MK5 7BT	11	11	11	6	4	9	8	6	8	5	6	6	9	5	19	17	20	14	8	9
40	MK5 7HY	11	11	11	5	4	9	8	5	8	5	7	7	10	6	19	17	20	13	9	10
41	MK8 0PB	10	10	10	4	4	8	8	7	8	7	9	9	11	6	20	18	19	13	11	12
42		7	7	8	2	3	5	7	7	8	8	9	10	11	8	17	19	17	11	11	12
43		5	6	5	3	5	7	8	8	9	9	10	11	13	10	17	18	17	12	13	13
44	MK19 6EL	5	8	7	4	5	7	9	9	10	8	10	11	13	10	16	17	17	12	13	14
45	MK17 0LS	11	13	13	10	10	13	14	11	14	11	11	12	14	8	15	13	23	17	14	15
46	MK17 0EX	11	16	16	13	14	16	19	16	18	15	14	14	16	12	13	11	23	21	16	17
47	MK19 6DX	7	12	13	13	14	16	17	17	17	17	18	18	20	16	13	13	19	20	20	21
48	MK17 0HD	10	14	15	16	16	16	17	16	17	18	17	17	19	15	9	9	19	20	20	20
49	MK18 5NN	11	14	15	16	15	16	16	16	17	18	17	18	21	20	7	8	18	20	20	21
50	MK19 6BT	11	14	15	15	15	16	16	16	16	18	17	18	20	20	10	11	15	20	20	21
51	MK19 6HD	8	10	11	12	12	12	12	12	13	14	13	14	17	17	12	12	15	16	17	17
52	NN12 7QS	10	11	12	13	12	13	13	13	14	15	14	15	17	17	14	15	11	17	17	18
53	NN12 7PQ	9	10	11	11	11	12	12	12	12	14	13	14	16	16	15	15	10	15	16	16
54	NN12 7UB	10	11	12	13	12	13	13	13	14	15	14	15	18	18	16	17	12	17	18	18
55	NN12 7SR	11	12	13	14	14	14	15	15	15	16	15	16	19	19	17	18	11	18	19	19
56	MK19 7JD	9	10	11	12	12	12	13	12	13	14	13	14	17	15	16	15	16	17	17	17
57	MK19 6EH	4	5	7	8	9	10	10	10	10	12	11	12	14	14	12	13	12	14	14	15
58	MK19 7HG	10	10	11	13	13	13	14	13	14	15	14	15	18	18	16	17	16	17	18	18
59	MK19 7AN	10	4	4	9	10	7	9	9	9	11	12	13	16	15	21	21	20	11	14	14

Driving-times in minutes. Source: Bing Maps, July 2012

APPENDIX 5 – JOURNEY-TIMES ON FOOT AND BY BUS

Zone	Reference point	Cofferdge Cl. Stony Stratford MK11 1BY	Tesco Wolverton MK12 5RJ	Asda Wolverton MK12 5JQ	WEA Zone 10	Sainsbury Shenley Ch. End MK5 6JG/GJU	Aldi Bradwell MK13 8BF	Marks & Spencer CMK MK9 3PD	Sainsbury CMK MK9 2FW	Waitrose CMK MK9 3NJ	Lidl Oldbrook MK6 2TA	Asda Denbigh MK1 1QB	Tesco Blechley MK1 1DD	Sainsbury Blechley MK2 2IS	Morrisons Westcroft MK4 4DD	Waitrose Buckingham MK18 1RS	Tesco Buckingham MK18 1AB	Waitrose Towcester NN12 6HZ	Tesco Newport Pagnell MK16 9AW	Marks & Spencer Kingston MK10 0BA	Tesco Kingston MK10 0AH
1a	MK11 1HT	5	15	16	—	—	32	23	26	24	36	64	56	62	41*	—	—	52	—	44*	44*
1b	MK11 1EB	3	14	15	—	—	31	22	25	23	35	63	55	61	40*	—	—	51	—	43*	43*
1c	MK11 1AT	6	19	20	—	—	36	27	30	28	40	68	60	66	45*	—	—	56	—	48*	48*
1d	MK11 1BL	6	19	20	—	—	36	27	30	28	40	68	60	66	45*	—	—	56	—	48*	48*
1e	MK11 1JF	5	16	17	—	—	33	24	27	25	37	65	57	63	42*	—	—	53	—	45*	45*
1f	MK11 1LT	4	16	17	—	—	33	24	27	25	37	65	57	63	42*	—	—	53	—	45*	45*
2	MK11 1DJ	9	15	16	—	—	33	24	27	25	37	65	57	65	42*	—	—	49	—	45*	45*
3	MK11 1NZ	14	17	18	—	—	29	21	24	22	34	61	53	59	39*	—	—	53	—	42*	42*
4	MK11 1ET	8	14	15	—	—	29	21	24	22	34	61	53	61	37*	—	—	51	—	42*	42*
5	MK11 2BB	15	19	20	—	—	26	27	30	28	40	58	50	56	46*	—	—	61	—	48*	48*
6	MK12 5PE	15	12	13	—	40	37	42	43	46	53	69	61	71	54*	—	—	—	28	63*	63*
7	MK13 0BE	28*	16	17	—	—	26	33	35	28	45	58	50	56	45*	—	—	—	33	44*	44*
8	MK12 5DQ	16	8	8	—	41	25	35	32	30	42	60	52	58	42*	—	—	—	24	46*	46*
9	MK12 5AX	19	9	11	—	41	31	35	38	40	48	66	58	64	48*	—	—	—	26	56*	56*
10	MK12 5DT	23	14	12	—	36	32	37	39	41	49	61	53	59	50*	—	—	—	28	57*	57*
11	MK12 6AW	21	16	17	—	33	34	31	36	39	46	63	55	61	47*	—	—	68	37	55*	55*
12	MK12 6JF	23	21	22	—	29	23	31	32	35	42	55	47	53	43*	—	—	71	34	51*	51*
13	MK8 8DT	24	33	34	—	32	39	25	28	26	38	—	51*	67	46*	—	—	65	—	46*	46*
14	MK13 0ES	30*	18	19	—	47	26	33	35	29	45	58	50	56	45*	—	—	—	41	45*	45*
15	MK13 7DB	36*	24	25	—	45	25	32	36	28	46	61	53	59	46*	—	—	—	—	44*	44*
16	MK13 7AY	34	23	24	—	—	25	25	27	29	37	57	49	55	44*	—	—	—	—	51*	51*
17	MK13 7JN	32	19	20	—	—	21	29	30	30	45	53	45	51	40*	—	—	—	—	49*	49*
18	MK13 0LB	32	20	19	—	—	29	26	28	30	38	61	53	59	48*	—	—	—	37	56*	56*
19	MK12 6HA	20	18	21	—	34	22	30	32	34	41	54	46	52	41*	—	—	—	37	50*	50*
20	MK14 6AS	41*	26	27	—	41	28	30	36	27	46	54*	48*	67	46*	—	—	—	36	43*	43*
21	MK13 7NB	34	30	31	—	40*	26	26	28	30	38	58	50	56	38*	—	—	—	—	46*	46*
22	MK13 7QS	25	22	23	—	30*	15	23	24	26	34	47	39	45	34*	—	—	—	—	36*	36*
23	MK13 9HU	27	28	29	—	42	25	31	33	35	42	55	47	53	34*	—	—	—	—	52*	52*
24	MK13 9BD	32	29	30	—	34*	13	26	28	30	38	51	43	49	33*	—	—	—	—	46*	46*
25	MK13 8BN	33	33	34	—	29	10	16	14	27	23	35	35	41	34	—	66	74	34	36	36
26	MK13 8DN	39	34	35	—	34	11	18	17	25	33	51	44	50	39	—	—	79	35	41	41
27	MK14 7DY	40	29	30	—	39	26	20	31	17	40	36	36	42	44	47	68	81	25	35	35
28	MK14 7BJ	35	27	28	—	35	23	13	25	15	35	31	35	41	40	43	64	76	23	30	30
29	MK8 8AP	30	24	25	—	26	35	28	29	32	39	67	59	61	40*	—	—	70	47	48*	48*
30	MK8 8ET	34*	26	27	—	24	27	26	27	30	37	61*	66	49	39	—	—	—	53	50*	50*
31	MK8 9EJ	36*	31	32	—	18	35	23	24	26	34	53*	64	44	31	—	—	—	45	42*	42*
32	MK8 9EE	36*	32	33	—	19	36	25	26	29	36	59*	65	47	33	—	—	—	52	48*	48*
33	MK5 8AS	45	36	37	—	22	30	24	27	27	31	53	44	45	32	42	71	75	45	43	43
34	MK5 6EQ	42*	37	38	—	5	34	20	27	27	35	53*	45	38	30	—	—	—	52	50	50
35	MK8 0DJ	50*	45	46	—	21	37	26	29	29	37	56*	57	50	27	—	—	—	49	45*	45*
36	MK5 6HT	48*	43*	44*	—	14	36	26	29	30	37	72	45	38	21	—	—	—	51	39	39
37	MK5 8EH	41*	42*	43*	—	20	31	21	24	25	32	49	46	39	20	55	77	87	53	34	34
38	MK5 7BB	47*	44*	45*	—	15	37	27	30	31	38	73	38	31	22	—	—	—	52	40	40
39	MK5 7BT	49*	46*	47*	—	19	39	29	32	33	40	75	37	30	19	—	—	—	54	42	42
40	MK5 7HY	48*	45*	46*	—	20	38	28	31	32	39	74	39	32	18	—	—	—	54	41	41
41	MK8 0PB	51*	47*	48*	—	24	40	29	32	32	40	59*	51*	59*	25	—	—	—	52	48*	48*
42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
44	MK19 6EL	50	54	55	—	59	53	39	42	40	54	92	62*	68*	55*	—	—	79	—	59*	59*
45	MK17 0LS	—	—	—	—	42*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
46	MK17 0EX	—	—	—	—	47*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
47	MK19 6DX	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
48	MK17 0HD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
49	MK18 5NN	—	—	—	—	—	—	—	—	—	—	—	—	—	—	47	—	—	—	—	—
50	MK19 6BT	22	31*	32*	—	49*	49	37	39	38	49	67*	59*	65*	50*	—	—	—	—	54*	54*
51	MK19 6HD	24	35*	36*	—	—	50	36	39	37	49	—	62*	68*	54*	—	—	40	—	57*	57*
52	NN12 7QS	44	54*	55*	—	—	70	56	59	57	69	—	82*	88*	74*	—	—	53	—	77*	77*
53	NN12 7PQ	34	44*	45*	—	—	60	46	49	47	59	—	72*	78*	64*	—	—	29	—	67*	67*
54	NN12 7UB	25	34*	35*	—	—	48	35	38	37	48	64*	60*	66*	49*	—	—	—	—	57*	57*
55	NN12 7SR	—	—	—	—	—	43	35	38	37	45	63*	55*	61*	44*	—	—	—	—	53*	53*
56	MK19 7JD	21	30*	31*	—	—	48	35	38	37	48	64*	56*	62*	52*	—	—	—	—	53*	53*
57	MK19 6EH	15	25*	26*	—	—	41	27	32	28	40	80	72	59*	43*	—	—	49	—	48*	48*
58	MK19 7HG	37*	25	26	—	—	38	46	44	47	54	74*	66*	72*	55*	—	—	—	—	63*	63*
59	MK19 7AN	32*	20	21	—	—	34	39	41	43	49	87	79	68*	52*	—	—	—	24	59*	59*

Notes to Appendix 5

- All journey times are expressed in minutes.
- Times in italics are for journeys on foot only.
- All other times are for journeys involving bus travel. The calculation includes:
 - walking-time from origin reference-point to appropriate bus stop;
 - 5 minutes' waiting-time;
 - scheduled bus journey-time to nearest stop to destination store. Bus routes with a frequency of less than one service per hour during weekday shopping hours have been disregarded; and
 - walking-time from bus stop to store.
- Times marked with an asterisk include a change of bus, no direct route being available. For the second bus, routes with a frequency of less than four services per hour during weekday shopping hours have been disregarded. In these cases the calculation includes, in addition to the times in 3. above:
 - waiting-time for the second bus, calculated as half the time-interval between successive buses during weekday shopping hours; and
 - scheduled journey-time for the second bus.
- Routes for which there are no bus services meeting these criteria are marked "—".
- In the absence of information on future bus routes serving the Western Expansion Area, all journey-times to its future store, as well as all journey-times from zones 42 and 43 to any store, have been excluded from this part of the analysis.
- Source: Traveline, subject to calculation of waiting-times as indicated above and to adjustment of some walking-times to allow for use of footpaths not taken into account by the source.

APPENDIX 6 – NOTES ON CALIBRATION

1. During calibration, control parameters within the model's formula are adjusted empirically until key results calculated from present store sizes align as closely as possible with known present market data. The basic parameters are:
 - the isochrone limit. This parameter sets the journey-time within which consumers are considered to make their choice of store. It will be longer for the non-car-owning market than for the car-owning one, and longer for rural zones than for urban ones; and
 - time-sensitivity (the power to which the journey-times are raised before taking their inverse in the calculation of attractiveness factors). This parameter expresses consumer sensitivity to time-saving: raising the power weights consumer preference towards shorter journey-times. It may be higher for urban zones than for rural ones.
2. Two sets of data are available to calibrate the model:
 - three major supermarkets' known shares of the Wolverton/Stony Stratford convenience-goods market¹. These are the dominant food retailer in this area (Tesco Wolverton), situated in close proximity to Cofferridge Close, and two major stores situated near the outer limits of the catchment area (Asda Denbigh and Tesco Bletchley); and
 - the known turnover of the present Cofferridge Close store in 2011².
3. It emerges from the Milton Keynes Retail Capacity Study that some consumers in the Stony Stratford/Wolverton area shop for convenience goods up to 11 minutes' drive away. Testing the model on existing store sizes with an isochrone limit of 11 minutes suggests, for the urban car-owning market, a time-sensitivity value of 3.0³.
4. At these values, and with an estimated 30-minute isochrone limit and time-sensitivity of 2.5 for the urban non-car-owning market, the model's results broadly approximate to present aggregate market shares in zones 1–11. These are therefore adopted for all urban zones, with increased isochrone limits in rural zones of 12 minutes for the car-owning market and 50 minutes for the non-car-owning market to allow for the longer journeys involved.
5. However, as expected with stores of such different qualitative attraction⁴, the model tends to underestimate the market shares of the 'superstore' category generally and of Tesco Wolverton in particular, while overestimating considerably the attraction of the present Cofferridge Close store.
6. An improved correlation is obtained by introducing a superstore constant (SSK) of 1.3, applied to the car-owning-market attractiveness factors of the seven stores in the superstore category. This reflects the qualitative competitive advantage enjoyed by these stores, over and above the quantitative element of size on which the model is based. As this advantage centres on features mainly attractive to car-borne shoppers (petrol filling-station, combined one-stop shopping for convenience and comparison goods etc.), the SSK is applied only to the car-owning market.
7. With this adjustment, the model is still understating slightly the market share of Tesco Wolverton and still overstating heavily the attraction of the present Cofferridge Close store. Introducing a Cofferridge Close constant (CCK) of 0.29, applied to the Cofferridge Close store's attractiveness factors in all markets, closely aligns the model's calculation of this store's turnover in 2011 with the actual figure, while bringing the market share of Tesco Wolverton almost exactly into line with its known actual value (see Figure 5).
8. Optimal calibration is thus obtained with present market data by applying the following parameter values and constants to the whole model:

	CAR-OWNING		NON-CAR-OWNING	
	URBAN	RURAL	URBAN	RURAL
Isochrone limit (minutes)	11	12	30	50
Time-sensitivity	3.0		2.5	
SSK constant	1.3		N/A	
CCK constant	0.29			

9. The forecasting run is then made using these values and committed 2016 store sizes, but varying the CCK constant in three scenarios as follows:
 - in the minimum scenario, the full CCK constant is retained for the car-owning market, on the assumption that the present under-performance of the Cofferridge Close store is wholly ascribable to the awkward and restricted vehicle access through the Silver Street archway and that its dissuasive effect on car-borne shoppers will continue to be felt, whatever the retailer operating the store;
 - in the median scenario, a CCK constant of 0.645⁵ is retained for the car-owning market, on the assumption that the present under-performance of the Cofferridge Close store is ascribable half to the Silver Street archway problem and half to the market profile of the current operator; and
 - in the maximum scenario, the CCK constant is removed entirely, on the assumption that the present under-performance of the Cofferridge Close store is wholly ascribable to the market profile of the current operator and not at all to the archway problem, and that the site will regain full competitive potential once it is operated by a first-tier retailer.

¹ *The Milton Keynes Retail Capacity and Leisure Study*, Spreadsheet 11a., in which the Wolverton/Stony Stratford market forms zone 7. This corresponds to zones 1–11 in this Assessment, whose total has been used to calibrate the model on the three market shares.

² £3,372,142. Source: Management of Budgen's, Stony Stratford. The model simulates this parameter by applying its calculation of the store's present market share in each zone of the study area to the relevant 2011 convenience-goods spending estimates in the *Milton Keynes Council Retail Capacity Update*, Spreadsheet 2.

³ This is a typical value for convenience-goods shopping.

⁴ See Chapter 6.0, paragraphs 6.5 to 6.7.

⁵ i.e. retaining half the present handicap. (The handicap = 1 minus the constant. Thus a constant of 0.29 = a 71% handicap; a constant of 0.645 = a 35.5% handicap.)

APPENDIX 9 – ATTRACTIVENESS FACTORS 2016 (CAR-OWNING MARKET, MAXIMUM SCENARIO)

Zone	Cofferdge Cl Stony Stratford MK11 1BY	Tesco Wolverton MK12 5RJ	Asda Wolverton MK12 5JQ	WFA Zone 10	Sainsbury Shenley Ch. End MK5 6JG6JU	Alji Bradwell Common MK13 8BF	Marks & Spencer CMK MK9 3PD	Sainsbury CMK MK9 2FW	Waitrose CMK MK9 3NJ	Lidl Oldbrook MK6 2YA	Asda Denbigh MK1 1QB	Tesco Blechley MK1 1DD	Sainsbury Blechley MK2 2JS	Morrisons Westcroft MK4 4DD	Waitrose Buckingham MK18 1RS	Tesco Buckingham MK18 1AB	Waitrose Towcester NN12 6HZ	Tesco Newport Pagnell MK16 9AW	Marks & Spencer Kingston MK10 0BA	Tesco Kingston MK10 0AH	TOTAL		
1a	55.074	53.206	1.455	10.156	2.471	0.650	1.555	3.847	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	128.414	
1b	55.074	103.919	2.310	15.160	3.518	0.892	2.070	5.120	1.222	0.495	5.315	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	195.095	
1c	185.875	30.791	0.975	10.156	2.471	0.488	0.000	3.847	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	234.602	
1d	185.875	19.390	0.975	10.156	2.471	0.488	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	219.355	
1e	185.875	53.206	2.310	24.074	5.251	0.892	1.555	5.120	1.222	0.659	5.315	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	285.479	
1f	185.875	30.791	1.455	24.074	3.518	0.892	1.555	3.847	1.222	0.495	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	253.723	
2	23.234	103.919	3.992	15.160	3.518	0.892	2.070	5.120	1.222	0.495	5.315	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	164.937	
3	23.234	53.206	2.310	41.600	8.338	1.270	2.070	5.120	1.626	0.904	5.315	0.000	0.000	3.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	148.597	
4	185.875	30.791	1.455	24.074	3.518	0.892	1.555	3.847	0.000	0.495	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	252.501	
5	11.896	30.791	3.992	41.600	8.338	1.270	2.840	7.023	2.230	0.904	7.075	2.587	0.000	3.603	0.000	0.000	0.000	0.000	0.000	0.000	0.000	124.148	
6	6.884	831.350	7.797	15.160	3.518	1.270	2.840	7.023	1.626	0.495	7.075	2.587	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	887.624	
7	1.487	246.326	18.481	10.156	2.471	3.009	4.043	10.000	2.230	0.659	5.315	0.000	0.000	0.000	0.000	0.000	0.000	1.767	0.000	0.000	0.000	305.945	
8	2.904	831.350	62.375	7.133	1.801	1.270	2.070	5.120	1.626	0.000	5.315	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	920.964	
9	4.335	831.350	18.481	10.156	2.471	1.270	2.070	5.120	1.222	0.000	5.315	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	881.790	
10	2.904	246.326	18.481	15.160	3.518	1.270	2.840	7.023	2.230	0.659	9.705	2.587	0.000	0.000	0.000	0.000	0.000	1.328	0.000	0.000	0.000	314.031	
11	6.884	53.206	7.797	41.600	8.338	1.895	4.043	10.000	3.176	0.904	9.705	3.444	0.000	3.603	0.000	0.000	0.000	1.328	0.000	0.000	0.000	155.922	
12	4.335	30.791	3.992	24.074	5.251	1.895	4.043	10.000	3.176	0.659	9.705	3.444	0.000	0.000	0.000	0.000	0.000	1.328	0.000	0.000	0.000	102.691	
13	4.335	19.390	1.455	192.593	28.141	3.009	4.043	14.927	3.176	1.921	9.705	4.724	0.000	6.578	0.000	0.000	0.000	1.328	0.000	0.000	0.000	295.324	
14	1.117	103.919	7.797	10.156	2.471	3.009	4.043	7.023	3.176	0.659	5.315	0.000	0.000	0.000	0.000	0.000	0.000	1.767	0.000	0.000	0.000	150.452	
15	1.117	30.791	2.310	15.160	3.518	3.009	9.583	14.927	7.528	0.904	7.075	2.587	0.000	0.000	0.000	0.000	0.000	3.451	1.503	6.130	0.000	109.593	
16	1.117	30.791	2.310	15.160	3.518	5.200	16.560	23.704	7.528	1.287	7.075	2.587	0.000	0.000	0.000	0.000	0.000	5.152	2.000	6.130	0.000	130.118	
17	2.040	103.919	7.797	24.074	5.251	10.156	9.583	14.927	4.741	1.287	9.705	3.444	0.000	0.000	0.000	0.000	0.000	3.451	1.503	4.605	0.000	206.482	
18	4.335	246.326	7.797	24.074	5.251	10.156	9.583	14.927	4.741	1.287	9.705	3.444	0.000	0.000	0.000	0.000	0.000	3.451	1.503	4.605	0.000	351.184	
19	4.335	103.919	7.797	24.074	5.251	3.009	4.043	14.927	3.176	0.904	13.818	4.724	0.000	0.000	0.000	0.000	0.000	1.767	0.000	0.000	0.000	191.743	
20	1.487	53.206	1.455	24.074	3.518	5.200	16.560	23.704	13.008	1.287	9.705	2.587	0.000	0.000	0.000	0.000	0.000	5.152	2.000	8.408	0.000	171.350	
21	1.117	30.791	2.310	15.160	3.518	5.200	16.560	23.704	13.008	1.287	9.705	3.444	0.000	0.000	0.000	0.000	0.000	5.152	2.000	8.408	0.000	141.363	
22	1.487	53.206	2.310	81.250	14.408	24.074	32.344	40.960	13.008	3.051	13.818	4.724	0.000	4.796	0.000	0.000	0.000	2.424	2.000	8.408	0.000	302.267	
23	1.487	30.791	2.310	24.074	5.251	5.200	6.035	14.927	4.741	0.904	9.705	2.587	0.000	0.000	0.000	0.000	0.000	2.424	0.000	0.000	0.000	110.435	
24	1.487	30.791	2.310	41.600	8.338	10.156	9.583	23.704	7.528	1.287	9.705	3.444	0.000	3.603	0.000	0.000	0.000	2.424	1.503	6.130	0.000	163.591	
25	1.117	19.390	3.992	24.074	14.408	81.250	76.667	189.630	25.406	3.051	20.626	4.724	1.043	4.796	0.000	0.000	0.000	3.451	3.906	11.972	0.000	489.502	
26	1.487	30.791	2.310	41.600	8.338	81.250	32.344	80.000	13.008	3.051	13.818	3.444	0.000	3.603	0.000	0.000	0.000	3.451	2.743	8.408	0.000	329.646	
27	1.117	30.791	2.310	41.600	8.338	10.156	76.667	80.000	25.406	1.921	13.818	4.724	1.043	0.000	0.000	0.000	0.000	5.152	3.906	11.972	0.000	318.920	
28	0.000	19.390	0.975	15.160	8.338	10.156	76.667	80.000	60.222	3.051	20.626	6.726	1.043	3.603	0.000	0.000	0.000	3.451	3.906	17.870	0.000	331.184	
29	2.904	30.791	2.310	81.250	14.408	5.200	6.035	14.927	3.176	0.904	13.818	4.724	0.000	4.796	0.000	0.000	0.000	1.767	0.000	0.000	0.000	187.009	
30	2.904	19.390	2.310	192.593	28.141	10.156	9.583	23.704	4.741	1.921	9.705	4.724	0.000	6.578	0.000	0.000	0.000	1.767	1.503	4.605	0.000	324.325	
31	2.040	19.390	0.975	81.250	66.704	5.200	16.560	40.960	7.528	1.921	20.626	6.726	1.388	9.367	0.000	0.000	0.000	1.328	1.503	6.130	0.000	289.593	
32	2.904	12.990	0.975	192.593	66.704	3.009	6.035	23.704	4.741	3.051	13.818	6.726	1.043	9.367	0.000	0.000	0.000	0.000	1.503	0.000	0.000	349.160	
33	1.487	12.990	0.684	41.600	28.141	3.009	6.035	14.927	3.176	1.921	13.818	4.724	0.000	6.578	0.000	0.000	0.000	0.000	0.000	0.000	0.000	139.090	
34	2.040	9.123	0.684	81.250	1801.000	3.009	6.035	40.960	4.741	5.272	20.626	10.040	1.388	9.367	0.000	0.000	0.000	0.000	2.000	0.000	0.000	4.605	2002.140
35	1.487	9.123	0.684	81.250	28.141	1.895	6.035	14.927	3.176	1.921	9.705	4.724	1.043	13.982	0.000	0.000	0.000	0.000	1.503	0.000	0.000	179.595	
36	1.487	4.997	0.499	41.600	66.704	1.270	6.035	40.960	4.741	5.272	20.626	10.040	1.904	13.982	0.000	0.000	0.000	0.000	2.743	6.130	0.000	228.988	
37	1.487	9.123	0.499	41.600	66.704	1.895	9.583	80.000	7.528	10.297	32.753	10.040	1.904	13.982	0.000	0.000	0.000	0.000	2.743	8.408	0.000	298.546	
38	1.117	4.997	0.375	24.074	66.704	1.270	4.043	40.960	4.741	5.272	32.753	15.943	1.904	13.982	0.000	0.000	0.000	0.000	2.743	6.130	0.000	227.006	
39	1.117	4.997	0.375	24.074	28.141	0.892	4.043	23.704	3.176	5.272	32.753	15.943	1.904	38.366	0.000	0.000	0.000	0.000	3.906	8.408	0.000	197.069	
40	1.117	4.997	0.375	41.600	28.141	0.892	4.043	40.960	3.176	5.272	20.626	10.040	1.388	22.202	0.000	0.000	0.000	0.000	2.743	6.130	0.000	193.701	
41	1.487	6.651	0.499	81.250	28.141	1.270	4.043	14.927	3.176	1.921	9.705	4.724	1.043	22.202	0.000	0.000	0.000	0.000	1.503	0.000	0.000	182.540	
42	4.335	19.390	0.975	650.000	66.704	5.200	6.035	14.927	3.176	1.287	9.705	3.444	1.043	9.367	0.000	0.000	0.000	1.328	1.503	0.000	0.000	798.417	
43	11.896	30.791	3.992	192.593	14.408	1.895	4.043	10.000	2.230	0.904	7.075	2.587	0.000	4.796	0.000	0.000	0.000	0.000	0.000	0.000	0.000	287.209	
44	11.896	12.990	1.455	81.250	14.408	1.895	2.840	7.023	1.626	1.287	7.075	2.587	0.000	4.796	0.000	0.000	1.000	1.023	0.000	0.000	0.000	152.150	
45	1.117	0.000	0.000	5.200	1.801	0.000	0.000	3.847	0.000	0.495	5.315	1.993	0.000	9.367	0.000	0.000							

APPENDIX 11 – MARKET SHARES 2016 (CAR-OWNING MARKET, MINIMUM SCENARIO)

Zone	Cofferdge Cl. Stony Stratford MK11 1BY	Tesco Wolverton MK12 5RU	Asda Wolverton MK12 5JQ	WFA Zone 10	Sainsbury Shenvley Ch. End MK5 6JG6JU	Alji	Bradwell Common MK13 8BF	Marks & Spencer CMK MK9 3PD	Sainsbury CMK MK9 2FW	Waitrose CMK MK9 9NJ	Lidl Oldbrook MK6 2YA	Asda Denbigh MK1 1QB	Tesco Blechley MK1 1DD	Sainsbury Blechley MK2 2JS	Morrisons Westcroft MK4 4DD	Waitrose Buckingham MK18 1RS	Tesco Buckingham MK18 1AB	Waitrose Towcester NN12 6HZ	Tesco Newport Pagnell MK16 9AW	Marks & Spencer Kingston MK10 0BA	Tesco Kingston MK10 0AH	TOTAL
1a	17.88%	59.57%	1.63%	11.37%	2.77%	0.73%	1.74%	4.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1b	10.24%	66.62%	1.48%	9.72%	2.25%	0.57%	1.33%	3.28%	0.78%	0.32%	3.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1c	52.52%	30.00%	0.95%	9.90%	2.41%	0.48%	0.00%	3.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1d	61.69%	22.19%	1.12%	11.62%	2.83%	0.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1e	35.11%	34.66%	1.50%	15.68%	3.42%	0.58%	1.01%	3.34%	0.80%	0.43%	3.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1f	44.27%	25.29%	1.19%	19.77%	2.89%	0.73%	1.28%	3.16%	1.00%	0.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2	4.54%	70.01%	2.69%	10.21%	2.37%	0.60%	1.39%	3.45%	0.82%	0.33%	3.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
3	5.10%	40.28%	1.75%	31.49%	6.31%	0.96%	1.57%	3.88%	1.23%	0.68%	4.02%	0.00%	0.00%	0.00%	2.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
4	44.72%	25.55%	1.21%	19.97%	2.92%	0.74%	1.29%	3.19%	0.00%	0.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
5	2.98%	26.61%	3.45%	35.95%	7.21%	1.10%	2.45%	6.07%	1.93%	0.78%	6.11%	2.24%	0.00%	3.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
6	0.23%	94.18%	0.88%	1.72%	0.40%	0.14%	0.32%	0.80%	0.18%	0.06%	0.80%	0.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
7	0.14%	80.79%	0.60%	3.33%	0.81%	0.99%	1.33%	3.28%	0.73%	0.22%	1.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.58%	0.00%	0.00%	100.00%
8	0.09%	90.47%	6.79%	0.78%	0.20%	0.14%	0.23%	0.56%	0.18%	0.00%	0.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
9	0.14%	94.61%	2.10%	1.16%	0.28%	0.14%	0.24%	0.58%	0.14%	0.00%	0.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
10	0.27%	78.96%	5.92%	4.86%	1.13%	0.41%	0.91%	2.25%	0.71%	0.21%	3.11%	0.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	0.00%	0.00%	100.00%
11	1.32%	35.23%	5.16%	27.54%	5.52%	1.25%	2.68%	6.62%	2.10%	0.60%	6.43%	2.28%	0.00%	2.39%	0.00%	0.00%	0.00%	0.00%	0.88%	0.00%	0.00%	100.00%
12	1.26%	30.91%	4.01%	24.17%	5.27%	1.90%	4.06%	10.04%	3.19%	0.66%	9.74%	1.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.33%	0.00%	0.00%	100.00%
13	0.43%	6.63%	0.50%	65.90%	9.63%	1.03%	1.38%	5.11%	1.09%	0.66%	3.32%	1.62%	0.00%	2.25%	0.00%	0.00%	0.00%	0.00%	0.45%	0.00%	0.00%	100.00%
14	0.22%	69.44%	5.21%	6.79%	1.65%	2.01%	2.70%	4.69%	2.12%	0.44%	3.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.18%	0.00%	0.00%	100.00%
15	0.30%	28.30%	2.12%	13.93%	3.23%	2.77%	8.81%	13.72%	6.92%	0.83%	6.50%	2.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.17%	1.38%	5.63%	100.00%
16	0.25%	23.81%	1.79%	11.72%	2.72%	4.02%	12.81%	18.33%	5.82%	1.00%	5.47%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.98%	1.55%	4.74%	100.00%
17	0.29%	50.68%	3.80%	11.74%	2.56%	4.95%	4.67%	7.28%	2.31%	0.63%	4.73%	1.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.68%	0.73%	2.25%	100.00%
18	0.36%	70.76%	2.24%	6.92%	1.51%	2.92%	2.75%	4.29%	1.36%	0.37%	2.79%	0.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.99%	0.43%	1.32%	100.00%
19	0.67%	55.08%	4.13%	12.76%	2.78%	1.60%	2.14%	7.91%	1.68%	0.48%	7.32%	2.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.94%	0.00%	0.00%	100.00%
20	0.25%	31.24%	0.85%	14.14%	2.07%	3.05%	9.72%	13.92%	7.64%	0.76%	5.70%	1.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	1.17%	4.94%	100.00%
21	0.23%	21.90%	1.64%	10.78%	2.50%	3.70%	11.78%	16.86%	9.25%	0.92%	6.90%	2.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.66%	1.42%	5.98%	100.00%
22	0.14%	17.66%	0.77%	26.97%	4.78%	7.99%	10.74%	13.60%	4.32%	1.01%	4.59%	1.57%	0.00%	1.59%	0.00%	0.00%	0.00%	0.00%	0.80%	0.66%	2.79%	100.00%
23	0.39%	28.15%	2.11%	22.01%	4.80%	4.75%	5.52%	13.65%	4.33%	0.83%	8.87%	2.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.22%	0.00%	0.00%	100.00%
24	0.27%	18.94%	1.42%	25.59%	5.13%	6.25%	5.90%	14.58%	4.63%	0.79%	5.97%	2.12%	0.00%	2.22%	0.00%	0.00%	0.00%	0.00%	1.49%	0.92%	3.77%	100.00%
25	0.07%	3.97%	0.82%	4.93%	2.95%	16.63%	15.69%	38.80%	5.20%	0.62%	4.22%	0.97%	0.21%	0.98%	0.00%	0.00%	0.00%	0.00%	0.71%	0.80%	2.45%	100.00%
26	0.13%	9.37%	0.70%	12.66%	2.54%	24.73%	9.84%	24.35%	3.96%	0.93%	4.21%	1.05%	0.00%	1.10%	0.00%	0.00%	0.00%	0.00%	1.05%	0.83%	2.56%	100.00%
27	0.10%	9.68%	0.73%	13.08%	2.62%	3.19%	24.10%	25.15%	7.99%	0.60%	4.34%	1.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.62%	1.23%	3.76%	100.00%
28	0.00%	5.85%	0.29%	4.58%	2.52%	3.07%	23.15%	24.16%	18.18%	0.92%	6.23%	2.03%	0.31%	1.09%	0.00%	0.00%	0.00%	0.00%	1.04%	1.18%	5.40%	100.00%
29	0.46%	16.65%	1.25%	43.93%	7.79%	2.81%	3.26%	8.07%	1.72%	0.49%	7.47%	2.55%	0.00%	2.59%	0.00%	0.00%	0.00%	0.00%	0.96%	0.00%	0.00%	100.00%
30	0.26%	6.02%	0.72%	59.76%	8.73%	3.15%	2.97%	7.36%	1.47%	0.60%	3.01%	1.47%	0.00%	2.04%	0.00%	0.00%	0.00%	0.00%	0.55%	0.47%	1.43%	100.00%
31	0.21%	6.73%	0.34%	28.20%	23.15%	1.80%	5.75%	14.22%	2.61%	0.67%	7.16%	2.33%	0.48%	3.25%	0.00%	0.00%	0.00%	0.00%	0.46%	0.52%	2.13%	100.00%
32	0.24%	3.74%	0.28%	55.49%	19.22%	0.87%	1.74%	6.83%	1.37%	0.88%	3.98%	1.94%	0.30%	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	0.00%	100.00%
33	0.31%	9.41%	0.50%	30.14%	20.39%	2.18%	4.37%	10.81%	2.30%	1.39%	10.01%	3.42%	0.00%	4.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
34	0.03%	0.46%	0.03%	4.06%	90.02%	0.15%	0.30%	2.05%	0.24%	0.26%	1.03%	0.50%	0.07%	0.47%	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.23%	100.00%
35	0.24%	5.11%	0.38%	45.51%	15.76%	1.06%	3.38%	8.36%	1.78%	1.08%	5.44%	2.65%	0.58%	7.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.84%	0.00%	100.00%
36	0.19%	2.19%	0.22%	18.25%	29.26%	0.56%	2.65%	17.97%	2.08%	2.31%	9.05%	4.40%	0.84%	6.13%	0.00%	0.00%	0.00%	0.00%	0.00%	1.20%	2.69%	100.00%
37	0.14%	3.07%	0.17%	13.98%	22.42%	0.64%	3.22%	26.89%	2.53%	3.46%	11.01%	3.37%	0.64%	4.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.92%	2.83%	100.00%
38	0.14%	2.21%	0.17%	10.64%	29.49%	0.56%	1.79%	18.11%	2.10%	2.33%	14.48%	7.05%	0.84%	6.18%	0.00%	0.00%	0.00%	0.00%	0.00%	1.21%	2.71%	100.00%
39	0.17%	2.55%	0.19%	12.27%	14.34%	0.45%	2.06%	12.08%	1.62%	2.69%	16.69%	8.12%	0.97%	19.55%	0.00%	0.00%	0.00%	0.00%	0.00%	1.99%	4.28%	100.00%
40	0.17%	2.59%	0.19%	21.56%	14.59%	0.46%	2.10%	21.23%	1.65%	2.73%	10.69%	5.20%	0.72%	11.51%	0.00%	0.00%	0.00%	0.00%	0.00%	1.42%	3.18%	100.00%
41	0.24%	3.66%	0.27%	44.77%	15.51%	0.70%	2.23%	8.23%	1.75%	1.06%	5.35%	2.60%	0.57%	12.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.83%	0.00%	100.00%
42	0.16%	2.44%	0.12%	81.73%	8.39%	0.65%	0.76%	1.88%	0.40%	0.16%	1.22%	0.43%	0.13%	1.18%	0.00%	0.00%	0.00%	0.00%	0.17%	0.19%	0.00%	100.00%
43	1.24%	11.05%	1.43%	69.09%	5.17%	0.68%	1.45%	3.59%	0.80%	0.32%	2.54%	0.93%	0.00%	1.72%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
44	2.40%	9.04%	1.01%	56.54%	10.03%	1.32%	1.98%	4.89%	1.13%	0.90%	4.92%	1.80%	0.00%	3.34%	0.00%	0.00%	0.00%	0.00%	0.71%	0.00%	0.00%	100.00%
45	1.14%	0.00%	0.00%	18.35%	6.35%	0.00%	0.00%	13.57%	0.00%	1.75%	18.75%	7.03%	0.00%	33.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
46	5.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	46.03%	0.00%	48.60%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
47	24.62%	75.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
48	6.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.92%	75.96%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
49	3.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.25%	71.70%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
50	7.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.04%	70.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
51	4.38%	34.56%	1.95%	15.64%	5.42%	1.95%	6.22%	15.40%														

APPENDIX 14 – MARKET SHARES 2016 (NON-CAR-OWNING MARKET)

Zone	Cofferidge Cl. Stony Stratford MK11 1BY	Tesco Wolverton MK12 5RJ	Asda Wolverton MK12 5JQ	WEA Zone 10	Sainsbury Stanley Ch. End MK5 6JGJU	Aldi Bradwell Common MK13 8BF	Marks & Spencer MK9 3PD	Sainsbury CMK MK9 2FW	Waitrose CMK MK9 3NJ	Lidl Oldbrook MK6 2TA	Asda Denbigh MK1 1QB	Tesco Blechley MK1 1DD	Sainsbury Blechley MK2 2IS	Morrisons Westcroft MK4 4DD	Waitrose Buckingham MK18 1RS	Tesco Buckingham MK18 1AB	Waitrose Towcester NN12 6HZ	Tesco Newport Pagnell MK16 9AW	Marks & Spencer Kingston MK10 0BA	Tesco Kingston MK10 0AH	TOTAL
1a	74.23%	16.38%	1.36%	—	0.00%	0.00%	2.28%	4.14%	1.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1b	89.88%	6.57%	0.54%	—	0.00%	0.00%	0.86%	1.54%	0.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1c	75.38%	14.53%	1.25%	—	0.00%	0.00%	2.44%	4.64%	1.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1d	75.38%	14.53%	1.25%	—	0.00%	0.00%	2.44%	4.64%	1.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1e	76.83%	14.43%	1.21%	—	0.00%	0.00%	2.12%	3.90%	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1f	85.28%	9.17%	0.77%	—	0.00%	0.00%	1.35%	2.48%	0.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2	40.57%	38.92%	3.23%	—	0.00%	0.00%	4.86%	8.96%	3.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
3	19.53%	41.35%	3.50%	—	0.00%	1.38%	9.87%	17.48%	6.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
4	42.21%	35.84%	2.94%	—	0.00%	0.74%	5.26%	9.32%	3.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
5	23.05%	43.92%	3.77%	—	0.00%	2.55%	7.38%	14.03%	5.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
6	12.92%	77.65%	6.20%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.22%	0.00%	0.00%	100.00%
7	5.41%	78.82%	6.61%	—	0.00%	2.98%	0.00%	0.00%	6.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
8	4.32%	84.03%	8.20%	—	0.00%	0.62%	0.00%	0.00%	0.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.86%	0.00%	0.00%	100.00%
9	3.98%	88.63%	5.23%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.16%	0.00%	0.00%	100.00%
10	6.52%	77.61%	11.13%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.74%	0.00%	0.00%	100.00%
11	11.96%	81.23%	6.81%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
12	14.68%	63.43%	5.51%	—	9.96%	6.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
13	18.20%	0.00%	0.00%	—	0.00%	0.00%	22.88%	42.63%	16.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
14	0.00%	81.15%	6.91%	—	0.00%	4.11%	0.00%	0.00%	7.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
15	0.00%	70.47%	6.21%	—	0.00%	8.09%	0.00%	0.00%	15.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
16	0.00%	42.24%	3.70%	—	0.00%	4.36%	13.87%	28.31%	7.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
17	0.00%	57.27%	4.91%	—	0.00%	5.67%	8.05%	18.29%	5.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
18	0.00%	52.14%	5.78%	—	0.00%	2.62%	10.95%	22.50%	6.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
19	15.10%	67.59%	4.48%	—	0.00%	5.20%	7.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
20	0.00%	56.61%	5.02%	—	0.00%	5.98%	16.02%	0.00%	16.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
21	0.00%	30.61%	0.00%	—	0.00%	5.56%	17.71%	36.40%	9.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
22	7.02%	33.27%	2.90%	—	0.00%	11.01%	12.04%	26.78%	6.96%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
23	20.19%	63.44%	5.67%	—	0.00%	10.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
24	0.00%	25.32%	2.27%	—	0.00%	23.91%	13.46%	27.66%	7.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
25	0.00%	0.00%	0.00%	—	3.27%	16.92%	16.64%	57.48%	3.53%	2.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
26	0.00%	0.00%	0.00%	—	0.00%	20.39%	18.96%	54.10%	6.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
27	0.00%	25.07%	2.25%	—	0.00%	4.18%	25.68%	0.00%	30.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.55%	0.00%	0.00%	100.00%
28	0.00%	12.64%	1.13%	—	0.00%	2.40%	31.79%	15.33%	17.46%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.52%	3.80%	8.95%	100.00%
29	6.81%	40.96%	3.61%	—	11.80%	0.00%	11.27%	25.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
30	0.00%	31.53%	2.80%	—	13.56%	3.64%	12.76%	28.71%	7.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
31	0.00%	0.00%	0.00%	—	29.69%	0.00%	18.49%	41.12%	10.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
32	0.00%	0.00%	0.00%	—	31.35%	0.00%	18.14%	40.68%	9.83%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
33	0.00%	0.00%	0.00%	—	23.06%	3.83%	21.33%	39.30%	12.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
34	0.00%	0.00%	0.00%	—	89.73%	0.00%	3.22%	3.76%	1.20%	0.00%	0.00%	0.00%	0.00%	2.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
35	0.00%	0.00%	0.00%	—	22.53%	0.00%	15.18%	28.58%	9.08%	0.00%	0.00%	0.00%	0.00%	24.62%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
36	0.00%	0.00%	0.00%	—	38.72%	0.00%	9.47%	17.83%	5.20%	0.00%	0.00%	0.00%	0.00%	28.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
37	0.00%	0.00%	0.00%	—	15.66%	0.00%	15.93%	28.23%	8.09%	0.00%	0.00%	0.00%	0.00%	32.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
38	0.00%	0.00%	0.00%	—	39.17%	0.00%	10.36%	19.68%	0.00%	0.00%	0.00%	0.00%	0.00%	30.79%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
39	0.00%	0.00%	0.00%	—	27.07%	0.00%	10.81%	0.00%	0.00%	0.00%	0.00%	0.00%	6.66%	55.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
40	0.00%	0.00%	0.00%	—	24.03%	0.00%	11.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	64.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
41	0.00%	0.00%	0.00%	—	28.04%	0.00%	20.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	51.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
44	9.24%	0.00%	0.00%	—	0.00%	0.00%	23.93%	49.18%	17.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
45	0.00%	0.00%	0.00%	—	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
46	0.00%	0.00%	0.00%	—	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
47	0.00%	0.00%	0.00%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
48	0.00%	0.00%	0.00%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
49	0.00%	0.00%	0.00%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
50	23.32%	32.70%	2.95%	—	3.72%	1.38%	8.85%	19.19%	6.50%	1.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
51	20.68%	26.74%	2.43%	—	0.00%	1.44%	10.45%	21.15%	7.66%	1.54%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.91%	0.00%	0.00%	0.00%	100.00%
52	100.00	0.00%	0.00%	—	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
53	13.37%	23.47%	2.17%	—	0.00%	0.00%	8.74%	18.46%	6.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.29%	0.00%	0.00%	0.00%	100.00%
54	18.12%	27.87%	2.53%	—	0.00%	1.55%	10.88%	21.90%	7.44%	1.57%	0.00%	0.00%	0.00%	8.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
55	0.00%	0.00%	0.00%	—	0.00%	3.73%	19.87%														

APPENDIX 15 – TURNOVER FORECAST FOR PROPOSED COFFERIDGE CLOSE STORE IN 2016 (continued)

(Continued from opposite page)

ZONES	FORECAST TOTAL CONVENIENCE-GOODS SPENDING IN SUPERMARKETS IN 2016			TURNOVER FORECAST FOR PROPOSED COFFERIDGE CLOSE STORE IN 2016									FORECAST MARKET SHARE OF PROPOSED COFFERIDGE CLOSE STORE IN 2016		
	CAR-OWNING HOUSEHOLDS (1)	NON-CAR-OWNING HOUSEHOLDS (2)	TOTAL (3)	MINIMUM SCENARIO			MEDIAN SCENARIO			MAXIMUM SCENARIO			MINIMUM SCENARIO (13)	MEDIAN SCENARIO (14)	MAXIMUM SCENARIO (15)
				CAR-OWNING HOUSEHOLDS (4)	NON-CAR-OWNING HOUSEHOLDS (5)	TOTAL (6)	CAR-OWNING HOUSEHOLDS (7)	NON-CAR-OWNING HOUSEHOLDS (8)	TOTAL (9)	CAR-OWNING HOUSEHOLDS (10)	NON-CAR-OWNING HOUSEHOLDS (11)	TOTAL (12)			
Rural															
44	£652,750	£55,950	£708,700	£15,670	£5,168	£20,839	£33,858	£5,168	£39,026	£51,036	£5,168	£56,204	2.94%	5.51%	7.93%
45	£772,486	£43,654	£816,140	£8,831	£-	£8,831	£19,370	£-	£19,370	£29,622	£-	£29,622	1.08%	2.37%	3.63%
46	£780,078	£30,368	£810,446	£41,917	£-	£41,917	£87,476	£-	£87,476	£127,738	£-	£127,738	5.17%	10.79%	15.76%
47	£292,805	£9,325	£302,130	£72,095	£-	£72,095	£123,212	£-	£123,212	£155,104	£-	£155,104	23.86%	40.78%	51.34%
48	£422,702	£-	£422,702	£25,881	£-	£25,881	£53,550	£-	£53,550	£77,611	£-	£77,611	6.12%	12.67%	18.36%
49	£367,200	£9,180	£376,380	£11,199	£-	£11,199	£24,011	£-	£24,011	£35,933	£-	£35,933	2.98%	6.38%	9.55%
50	£719,890	£57,815	£777,705	£55,877	£13,481	£69,358	£113,494	£13,481	£126,975	£161,911	£13,481	£175,392	8.92%	16.33%	22.55%
51	£6,281,320	£391,650	£6,672,970	£274,886	£80,988	£355,874	£580,298	£80,988	£661,285	£856,153	£80,988	£937,141	5.33%	9.91%	14.04%
52	£849,609	£20,361	£869,970	£44,186	£20,361	£64,547	£92,393	£20,361	£112,754	£135,155	£20,361	£155,516	7.42%	12.96%	17.88%
53	£3,319,488	£253,368	£3,572,856	£96,277	£33,869	£130,146	£206,792	£33,869	£240,661	£309,980	£33,869	£343,849	3.64%	6.74%	9.62%
54	£4,476,168	£223,992	£4,700,160	£243,116	£40,586	£283,702	£507,014	£40,586	£547,600	£739,939	£40,586	£780,525	6.04%	11.65%	16.61%
55	£846,396	£31,212	£877,608	£48,063	£-	£48,063	£99,951	£-	£99,951	£145,505	£-	£145,505	5.48%	11.39%	16.58%
56	£1,169,355	£80,195	£1,249,550	£46,090	£19,940	£66,030	£97,793	£19,940	£117,732	£144,945	£19,940	£164,885	5.28%	9.42%	13.20%
57	£3,754,245	£266,695	£4,020,940	£272,309	£73,673	£345,982	£556,262	£73,673	£629,935	£797,394	£73,673	£871,067	8.60%	15.67%	21.66%
58	£600,530	£57,815	£658,345	£34,728	£3,728	£38,456	£72,134	£3,728	£75,862	£104,991	£3,728	£108,629	5.84%	11.52%	16.50%
59	£2,997,055	£208,880	£3,205,935	£9,167	£10,435	£19,602	£20,313	£10,435	£30,747	£31,375	£10,435	£41,810	0.61%	0.96%	1.30%
Sub-total 44-59	£28,302,077	£1,740,460	£30,042,537	£1,300,293	£302,228	£1,602,522	£2,687,919	£302,228	£2,990,148	£3,904,302	£302,228	£4,206,530	5.33%	9.95%	14.00%
TOTAL FORECAST TURNOVER						£6,079,667			£9,226,338			£11,694,580			

Notes to Appendix 15

Column (1) is the product of columns (25) and (28) of Appendix 2.

Column (2) is the product of columns (24) and (28) of Appendix 2.

Column (3) is the sum of columns (1) and (2).

Column (4) is calculated from the 'Cofferidge Close' column of Appendix 11 applied to column (1) of this table.

Column (5) is calculated from the 'Cofferidge Close' column of Appendix 14 applied to column (2) of this table.

Column (6) is the sum of columns (4) and (5).

Column (7) is calculated from the 'Cofferidge Close' column of Appendix 12 applied to column (1) of this table.

Column (8) is calculated from the 'Cofferidge Close' column of Appendix 14 applied to column (2) of this table.

Column (9) is the sum of columns (7) and (8).

Column (10) is calculated from the 'Cofferidge Close' column of Appendix 13 applied to column (1) of this table.

Column (11) is calculated from the 'Cofferidge Close' column of Appendix 14 applied to column (2) of this table.

Column (12) is the sum of columns (10) and (11).

Column (13) expresses column (6) as a percentage of column (3).

Column (14) expresses column (9) as a percentage of column (3).

Column (15) expresses column (12) as a percentage of column (3).