Technical Note

Lidl Lampeter

Assessment of Vehicle Mileage Savings

240833: JC/240833/TN01 – Rev0.2

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EXECUTIVE SUMMARY

The investigations into the potential vehicle mileage savings accrued from the development of a new Lidl discount foodstore in Lampeter have concluded as follows:-

- That the upper estimate for vehicle mileage savings is 122 miles per day or 44,358 miles per annum, and
- That the lower estimate for vehicle mileage savings is 94 miles per day or 34,214 miles per annum.

If we assume that the current stock of private cars on the local highway network around Lampeter are several years old and emitting CO2 on average at circa 238 grams per mile[1], then the upper estimate of total CO2 emissions saved per annum would be 10,557,278 grams of CO2 (circa 10.6 metric tonnes).

New cars sold in the UK will emit CO2 at significantly lower rates, circa 207.1 grams per mile[2]. Therefore, if we assume that average UK mileage per car is 7,100, newly registered cars will emit 1,470,410 grams of CO2 per annum (circa 1.5 metric tonnes).

The upper estimate of vehicle mileage savings would therefore equate to circa seven new cars being taken off the road (10.6 / 1.5).

The lower estimate for vehicle mileage savings would equate to circa 8,143,000 grams of CO2 being lost from the environment (8.1 metric tonnes). If we equate this to an average car of older stock on the local highway network, emitting CO2 at 238 grams per mile, then again, on the basis of 7,100 miles travelled per average year, this vehicle would emit 1,689,800 grams of C02 into the atmosphere (1.7 metric tonnes).

The lower estimate of vehicle mileage savings would therefore be equivalent to circa five existing cars being taken off the road (8.1 / 1.7).

Lidl's new foodstore proposals and the vehicle mileage savings that would accrue, would therefore be equivalent to **the removal of between 5 and 7 cars per annum** from the local highway network and between **8.1 and 10.6 metric tonnes of CO2 being lost** to the environment.

[1] Based on DfT statistics for cars registered between 2008 and 2024
[2] Based on DfT statistics for cars registered in 2024 alone

1.0 INTRODUCTION

1.1. This Technical Note (TN) has been produced by SCP to provide an estimate of the vehicle mileage change that could be achieved on the highway network from the development of a proposed new discount food store unit in Lampeter.

1.2. A number of assumptions have been outlined within this TN, which have been used to develop a reasoned methodology for estimating the anticipated future trip movements of potential customers to the proposed store.

1.3. Retail surveys have been provided by Carney Sweeney. However, this assessment has been undertaken separate to the provided information, utilising the survey results as a method of cross checking the results of the calculations. The following sections outline the methods of calculation and how we have been able to generate a range of potential mileage changes on the local highway network that would result from local residents transferring to the Lidl store in Lampeter.

2.0 PROPOSED DEVELOPMENT

2.1. The location of the proposed store and the surrounding highway network is shown below in **Figure 1**.

Figure 1 – Site location

2.2. The site is located on the southeastern edge of the town of Lampeter, on the border of Ceredigion and Carmarthenshire, within the administrative boundary of Carmarthenshire. The proposals include the construction of an A1 discount food store with a sales area of 1,334sqm and 1,962 sqm of gross internal area.

2.3. The site is currently an undeveloped piece of land found approximately 650m to the southeast of Lampeter and is bound by the A485 to the south and the A482 to the east.

2.4. In order to present anticipated trip generation to the proposed store, trip rates based on other existing Lidl stores within the TRICS database with a similar retail floor area (RFA) have been used. The average trip rate was calculated from the TRICS outputs for weekdays, Saturdays and Sundays. The TRICS reports are provided in **Appendix 1**.

2.5. The table below provides the daily arrival, departure and total trip rates for these stores for the weekday, Saturday and Sunday total trips.

Table 1 – Proposed store trip rates (vehicles per 100sqm of RFA)

	Weekday			Saturday			Sunday		
	Arr	Dep	**Total**	Arr	Dep	**Total**	Arr	Dep	**Total**
Trip Rates	80	80	**161**	84	84	**168**	77	79	**156**

2.6. These trip rates were then used to calculate the estimated trip generation associated with the proposed discount food store, using an RFA of 1,334m^2.

Table 2 – Proposed store trip generation

	Weekday			Saturday			Sunday			Average Day		
	Arr	Dep	**Total**	Arr	Dep	**Total**	Arr	Dep	**Total**	Arr	Dep	**Total**
Trip Generation	1073	1070	**2143**	1125	1122	**2246**	1032	1051	**2083**	1074	1051	**2083**

2.7. The trip generation table suggests that the anticipated average trip generation per day of the proposed store would be 2,083 trips, two-way.

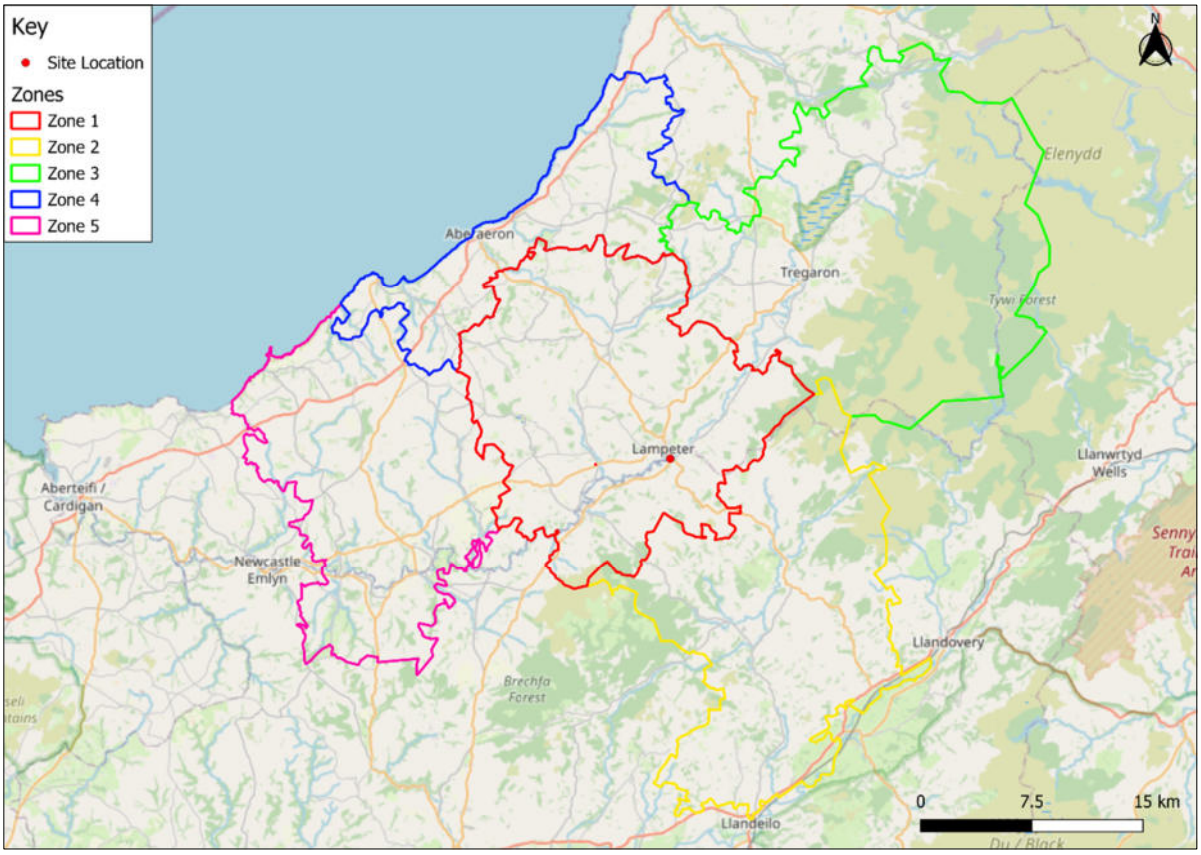
2.8. We have assumed within the Transport Assessment supporting the Lampeter Lidl store proposal, that 50% of trips to and from the store would already be on the network and passing by. The remaining 50% will be "new" to the immediate study area around the new store, but it follows that these trips are those that will have been undertaken by car at other foodstores within the study area and are effectively transferring.

2.9. The vehicle mileage assessments that follow will be based on the 2,083 two-way trips generated from these customers choosing the Lidl in Lampeter rather than where they currently shop.

3.0 RETAIL SURVEY DATA

As part of the retail assessment work to support the proposed store application, a household survey has been undertaken. This survey split the responses from households within the local area into the following geographical zones. These zones are displayed in **Figure 2** below.

Figure 2 – Zone locations



3.1. Within this assessment area, the household interview survey asked respondents the question "where did you last undertake a main food and grocery shop". The answers to this question are summarised in a zonal movement basis in **Figure 3** and these results illustrate the degree to which there either is or isn't movement between and within zones for the purpose of food shopping.

Figure 3 – Zonal distribution of survey respondents

From	To	Proportion
Zone 1	Zone 1	73.06%
	Zone 2	0.00%
	Zone 3	0.00%
	Zone 4	1.77%
	Zone 5	0.00%
	Outside	25.16%

From	To	Proportion
Zone 2	Zone 1	46.67%
	Zone 2	2.16%
	Zone 3	0.72%
	Zone 4	0.00%
	Zone 5	0.00%
	Outside	50.46%

From	To	Proportion
Zone 3	Zone 1	28.52%
	Zone 2	0.00%
	Zone 3	6.30%
	Zone 4	0.00%
	Zone 5	0.00%
	Outside	65.18%

From	To	Proportion
Zone 4	Zone 1	9.57%
	Zone 2	0.00%
	Zone 3	0.00%
	Zone 4	8.38%
	Zone 5	0.00%
	Outside	82.06%

From	To	Proportion
Zone 5	Zone 1	6.60%
	Zone 2	0.00%
	Zone 3	0.00%
	Zone 4	0.73%
	Zone 5	6.66%
	Outside	86.02%

3.2. Regarding the zonal distribution of the shopping movements from the survey results, the following was apparent.

- Zone 1 – 73% of Zone 1 shoppers stay within the zone and 25.16% shop outside of the provided zones
- Zone 2 – 2.16% of Zone 2 shoppers stay within the zone and 46.67% shop in Zone 1.
- Zone 3 – 6.3% of Zone 3 shoppers stay within the zone and 28.52% shop in Zone 1
- Zone 4 – 8.38% of Zone 4 shoppers stay within the zone and 9.57% shop in Zone 1
- Zone 5 – 6.66% of Zone 5 shoppers stay within the zone and 6.60% shop in Zone 1

3.3. The retail survey data identifies that shopping trips by residents within the study area can already involve potentially long journey distances.

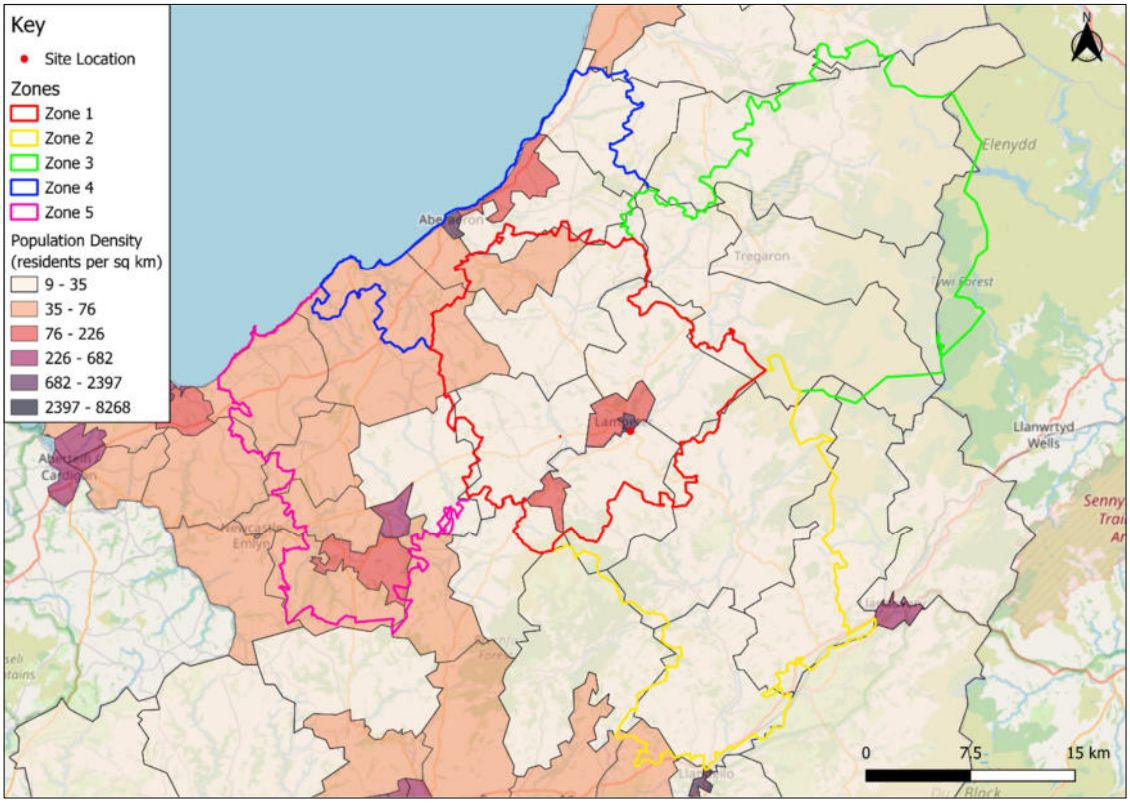
3.4. Lidl's planning consultants, Carney Sweeney, have estimated based on the household interview data that trade diversion to the new store in Lampeter will derive from the following stores in each zone:-

	Zone					
Estimate of Trade Diversion to Lidl, Lampeter by store and by zone	**1**	**2**	**3**	**4**	**5**	**Total**
	£m	**£m**	**£m**	**£m**	**£m**	**£m**
Zone 1						
Co-op, Bridge Street, Lampeter, SA48 7AF	0.6	0.2	0.0	0.0	0.0	0.8
Local shops, Lampeter Town Centre	0.1	0.0	0.0	0.0	0.00	0.1
Sainsbury's, Market Street, Lampeter, SA48 7DS	2.3	0.2	0.1	0.0	0.0	2.6
Zone 4						
Costcutter, Market Street, Aberaeron, SA46 0AS	0.2	0.0	0.0	0.00	0.0	0.2
Costcutter, Uplands Square, New Quay, SA45 9QH	0.0	0.0	0.0	0.1	0.0	0.1
Zone 5						
CK's Supermarket, Pencader Road, Pontwelly, Llandysul, SA44 4AE	0.1	0.0	0.0	0.1	0.1	0.2
Spar, Lincoln Street, Llandysul, SA44 4BU	0.0	0.0	0.0	0.0	0.1	0.1
Beyond Study Area						
Aldi, Stephens Way, Carmarthen, SA31 2BG	1.0	0.3	0.0	0.0	0.1	1.4
Lidl, Friars Park, Carmarthen, SA31 3FF	0.1	0.2	0.0	0.0	0.7	0.9
Lidl, Rheidol Retail Park, Alexandra Road, Aberystwyth, SY23 1LL	0.6	0.0	0.6	0.1	0.0	1.2
Morrisons, Parc Pensarn, Carmarthen, SA31 2NF	0.0	0.3	0.0	0.0	0.04	0.4
Morrisons, Parcydolau, Aberystwyth, SY23 3TL	0.3	0.0	0.1	0.00	0.0	0.4
Tesco Extra, Lon Y Plas, Morfa Lane, Carmarthen, SA31 3AX	0.2	0.2	0.0	0.00	0.00	0.4
Tesco Superstore, Park Avenue, Aberystwyth, SY23 1PB	0.1	0.0	0.1	0.20	0.0	0.3
	5.8	**1.4**	**1.0**	**0.3**	**0.8**	**9.2**

4.0 TRIP TRANSFER ESTIMATES

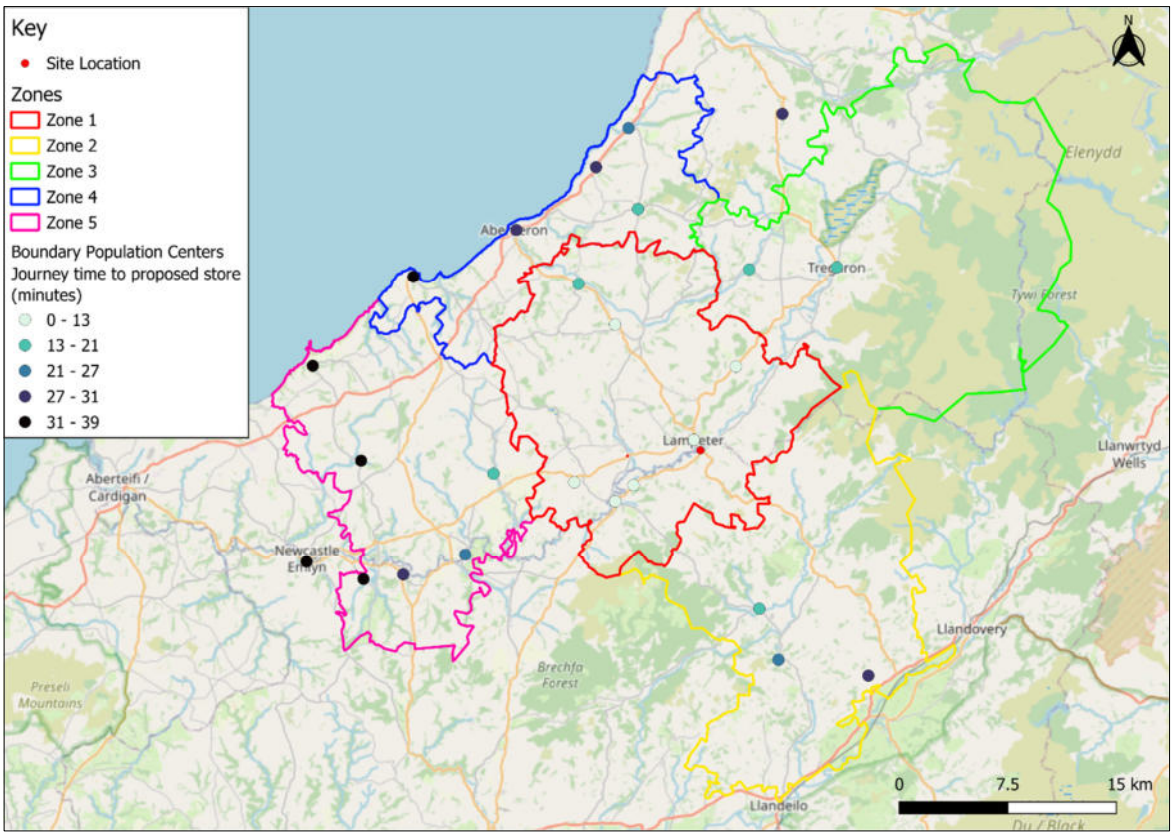
4.1. The origin of visitors to the proposed Lidl store in Lampeter has been determined using a desk-based study based on the population of census boundaries within the retail survey zones and the distances from these areas to their 'typical' shopping locations and to the proposed discount food store.

Figure 4 – MSOA census boundaries within zones



4.2. Within each census output area, a population centre has been found by selecting a residential location within the boundary with the largest population. These population centres can be seen below, colour coded to represent the time it would take to travel between each centre and the proposed store.

Figure 5 – Population centre locations & distance to proposed store



4.3. Distances from each census output area population centre have been measured to each of the stores identified in the following list, based on the approximate drive distance along the highway network.

- Sainsbury's, Lampeter
- Co-op, Lampeter
- Costcutter, Aberaeron
- Costcutter, New Quay
- Spar, Llandysul
- CK Foodstores, Llandysul
- Lidl, Aberystwyth
- Aldi, Cardigan
- Tesco, Cardigan

4.4. The one-way journey distance by road (from the population centre to the store) for each of these assigned movements has then been calculated.

4.5. Using a Diversion Curve methodology, we have provided an independent assessment of trade diversion based upon the propensity for customers to choose Lidl in Lampeter over their existing store due to journey time and travel distance savings. This methodology requires the following information:-

- Identification of the key points of origin in each zone and the size of their populations;
- An estimate of the distances between these population centres and their current store of choice;
- An estimate of the journey times between these population centres and their current store of choice;
- An estimate of the distances between these population centres and the new Lidl in Lampeter;
- An estimate of the journey times between these population centres and the new Lidl in Lampeter.

4.6. The Diversion Curve methodology (using the California technique) is then undertaken as follows:-

- Calculate the difference in distance between the current foodstore shop and that to the new Lidl in Lampeter from each zone. This change in distance is **Δd**;
- Calculate the difference in journey time between the current foodstore shop and that to the new Lidl in Lampeter from each zone. This change in time is **Δt**;
- Calculate the percentage of trips **P** that might transfer to the new store in Lampeter using the following equation:-

$$P = 50 + 50(\Delta d + 0.5\Delta t) / SQRT\ [(\Delta d - 0.5\Delta t)^2 + 4.5]$$

4.7. The balance of trips will remain on the route to and from their current store of choice and are assumed not to transfer.

4.8. The worksheets provided at **Appendix A** to this note summarise the calculations obtained from this methodology utilising the data input as described above.

4.9. Two assessments have been undertaken to derive high and low forecasts for potential trip diversion to the new Lidl on the basis of the following assumptions:-

- High – not utilising the stores listed above that are outside of the provided zones (Cardigan, Aberystwyth and Carmarthen) as the current trips from each population centre, and
- Low - utilising stores also within Cardigan, Aberystwyth and Carmarthen, to adjust for the potential additional draw of these towns for multiple purpose trips.

4.10. The tables below identify the total vehicle mileage changes that are derived from the application of the diversion curve assessment described above.

Table 3 – High Forecast of Vehicle Mileage Changes Per Day and Per Annum

Zone	Daily vehicle mileage calculations		
	Combined vehicle mileage to current store of choice	Combined vehicle mileage allowing for potential transfer to Lampeter Lidl	Change
Zone 1	2516.4	2329.7	-186.8
Zone2	1653.0	1632.5	-20.5
Zone 3	2361.8	2447.6	85.8
Zone 4	1053.7	1053.7	0.0
Zone 5	3932.7	3932.7	0.0
Total mileage	**11517.6**	**11396.1**	**-121.5**
		Vehicle mileage saving per annum:-	**44,358**

Table 4 – Low Forecast of Vehicle Mileage Changes Per Day and Per Annum

Zone	Daily vehicle mileage calculations		
	Combined vehicle mileage to current store of choice	Combined vehicle mileage allowing for potential transfer to Lampeter Lidl	Change
Zone 1	2516.4	2329.7	-186.8
Zone2	1653.0	1632.5	-20.5
Zone 3	2048.5	2179.8	131.3
Zone 4	5451.9	5408.5	-43.3
Zone 5	9782.0	9807.6	25.6
Total mileage	**21451.8**	**21358.1**	**-93.7**
		Vehicle mileage saving per annum:-	**34,214**

4.13. The results obtained from this exercise and summarised in the tables above demonstrate that the proposed new Lidl store in Lampeter could result in annual vehicle mileage savings of between 34,000 and 45,000 per annum.

4.14. The resulting mileage from each zone that would be transferred to the proposed store was calculated as a percentage of the total mileage transferred. This percentage was then applied to the total anticipated store earnings that are expected to be drawn from nearby stores. These numbers can then be compared against the trade draw assessment provided by Carney Sweeney below, to provide an independent verification of the results obtained.

Table 5 – Proportion of trips transferring against Carney Sweeney Trade Draw Estimates

	Check against retail trade draw		
Zone	Trade draw from Carney Sweeney data (£M)	Proportion of total trips – Low Forecast (£M)	Proportion of total trips – High Forecast (£M)
Zone 1	5.8	5.9	6.7
Zone2	1.4	1.3	1.4
Zone 3	1.0	0.7	1.1
Zone 4	0.3	0.4	0.0
Zone 5	0.8	0.9	0.0
Total trade transferred (£M)	9.2	9.2	9.2

4.15. The figures summarised above suggest broad correlation with the Carney Sweeney trade draw estimates.

5.0 SUMMARY AND CONCLUSIONS

5.1. This TN has been produced to provide an estimate of the vehicle mileage savings that would result from the additional choice of a new discount food store offer in Lampeter.

5.2. The calculations have identified that the proposed new food store unit could generate a net saving of approximately 122 vehicle miles per day, and up to around 44,358 vehicle miles per year on the local highway network.

5.3. In terms of CO2 emissions, Lidl's new foodstore proposals and the vehicle mileage savings that would accrue, are estimated to be equivalent to **the removal of between 5 and 7 cars per annum** from the local highway network.

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APPENDIX 1

		Other Food Stores	Coordinates
Lower Threshold	Zone 1	Sainsbury's Lampeter	52.1137003358599, -4.080116390994613
Higher Threshold		Co-op Lampeter	52.10958146171355, -4.074154476393864
	Zone 2		
	Zone 3		
	Zone 4	Costcutter Aberaeron	52.24253806123297, -4.259344030277361
		Costcutter New Quay	52.2115837628575, -4.359888077750695
	Zone 5	Spar Llandysul	52.041129862331246, -4.309680433936378
		CK Foodstores Llandysul	52.037272615191355, -4.313282038243657
	Outside of Zones	Aldi Carmarthen	51.849515577506697, -4.307598959373488
		Lidl Carmarthen	51.85477086661124, -4.31215367697342
		Lidl Aberystwyth	52.41409055226601, -4.08075738230074
		Morrisons Carmarthen	51.84609852674021, -4.307540923099508
		Morrisons Aberystwyth	52.40466189770661, -4.0675473636413
		Tesco Extra Carmarthen	51.8534886819222, -4.317299560631566
		Tesco Superstore Aberystwyth	52.41221628659085, -4.082757468396328

Proposed Lidl Store	Coordinates
Lidl Lampeter	52.10623094204795, -4.071320048061141

LSOA Boundary/Area	Population Density (person/km)	Zone	Residential Areas Within Boundary	Population of Residential Areas Within Boundary	Population Centre Location	Population of Centre Location	Trips from Zone	Coordinates	Distance to Proposed Lidl (Miles)	Journey time to Proposed Lidl (Minutes)	Chosen Other Food Store	Distance to Other Food Store (Miles)	Journey Time to Other Food Store (Minutes)	California Diversion Curve	Transfer to Lidl	Remain at Existing	Post-Lidl opening veh mileage	Pre-opening veh mileage	Total trips transfer-ing to Lidl	Total Trips to all foodstores	Transfer Trips by Zone as proporton of total spend
W01000701 : Carmarthenshire 001C	24.3	1	Pencarreg	Pencarreg - 1,243 (2021) 1,169 (2011)	Pencarreg	1,243	105	52.084952900528165, -4.139474203058018	3.5	6	Sainsbury's Lampeter	4.5	10	1.14	105	0	365	470	390	653	6.7
			Cwmann	Cwmann - 975 (2021)																	
W01000702 : Carmarthenshire 001D	220.7	1	Llanbydder	Llanbydder - 1,638 (2011)	Llanbydder	1,638	138	52.074915255769945, -4.157796976671026	4.6	9	Sainsbury's Lampeter	5.5	11	0.96	132	6	642	765			
lsoa2021:W01000527 : Ceredigion 008A	1,207.5	1	Lampeter	Lampeter - 2,505 (2021) 2,970 (2011)	Lampeter	2505	212	52.112929139298416, -4.078540456543687	0.6	2	Sainsbury's Lampeter	0.4	2	0.46	97	115	110	92			
lsoa2021:W01000528 : Ceredigion 008B	115.7	1					0														
lsoa2021:W01000535 : Ceredigion 008C	27.5	1	Outskirts of Lampeter Temple Bar Felinfach Ystrad Aeron Dihewyd Talsarn Felindre Llwyn-y-groes Llangybi	Outskirts of Lampeter Temple Bar Felinfach Ystrad Aeron - 625 (2021) 596 (2011) Dihewyd - 286 (2021) Talsarn - 284 (2021) Felindre - 337 (2021) Llwyn-y-groes Llangybi - 444 (2011)	Ystrad Aeron	625	53	52.1842522778655, -4.157997382225935	7.1	13	Sainsbury's Lampeter	6.6	12	0.25	13	40	355	348			
lsoa2021:W01000537 : Ceredigion 008D	19.1	1	Betw Bledrws Silian Llanfair Clydogau Cellan Llanwnnen Capel-y-Groes Cwrtnewydd	Betw Bledrws - 235 (2021) Silian - 327 (2021) Llanfair Clydogau - 174 (2021) Cellan - 174 (2021) Llanwnnen - 463 (2021) 490 (2011) Capel-y-Groes	Llangybi	444	37	52.1582664555421, -4.0360651079323	4.8	10	Sainsbury's Lampeter	4.3	9	0.26	10	28	168	163			
lsoa2021:W01000541 : Ceredigion 008E	25.4	1	Capel St Silo Drefach Llanwenog Rhuddlan Llanwrda	Cwrtnewydd - 233 (2021) Capel St Silo Drefach - 305 (2021) Llanwenog - 1,281 (2021) 1,364 (2011) Llanwrda - 287 (2011)	Llanwenog	1281	108	52.0867180306865, -4.199158120678501	6.6	13	Co-op Lampeter	6.3	12	0.31	34	75	689	679			
W01000647 : Carmarthenshire 002A	11.1	2	Llansadwrn Cilycwm Llansawei	Llansadwrn - 519 (2021) 517 (2011) Cilycwm - 487 (2011) 439 (2021) Llansawei - 438 (2021) 438 (2011)	Llansadwrn	519	44	51.966121220669415, -3.90235906610786	16.2	29	Co-op Lampeter	16.5	30	0.68	30	14	714	722	83	123	1.4
W01000650 : Carmarthenshire 002B	9.6	2	Pumsaint Caeo Ffarmers Salem	Pumsaint Caeo Ffarmers - 222 (2021) Salem - 396 (2021)	Llansawei	438	37	52.00777298803734, -4.0124826429220395	8.9	21	Co-op Lampeter	9.2	21	0.56	21	16	335	340			
W01000709 : Carmarthenshire 004D	27.3	2	Halfway Manordeilo Talley	Halfway - 283 (2021) Manordeilo - 325 (2021) Talley - 494 (2011) 459 (2021)	Talley	494	42	51.97599343614209, -3.993157517475135	13.9	24	Co-op Lampeter	14.2	26	0.78	32	9	583	591			
lsoa2021:W01000536 : Ceredigion 011E	9.0	3	Llangeitho Llanddewi Brefi Lledrod Swyddffynnon	Llangeitho - 741 (2021) 819 (2011) Llanddewi Brefi - 620 (2021) 640 (2011) Lledrod - 694 (2021) 735 (2011) Swyddffynnon - 368 (2021)	Llangeitho	741	63	52.21858636655301, -4.022653744332483	11.2	21	Sainsbury's Lampeter	10.6	20	0.25	16	47	674	665	66	196	1.1
lsoa2021:W01000542 : Ceredigion 011F	9.9	3	Ystrad Meurig Pontrhydfendigaid Strata Florida Ffair-rhos Ysbyty Ystwyth	Ystrad Meurig - 368 (2021) 353 (2011) Pontrhydfendigaid - 312 (2021) Strata Florida Ffair-rhos - 396 (2021) Ysbyty Ystwyth - 434 (2021) 409 (2011)	Lledrod	694	59	52.3145444252317 45, -3.9892006876140793	17.3	31	Costcutter Aberaeron	15.2	36	0.54	32	27	955	889			
lsoa2021:W01000550 : Ceredigion 011G	13.4	3	Pont-rhyd-y-groes Tregaron	Pont-rhyd-y-groes - 191 (2021) Tregaron - 880 (2021) 1,213 (2011)	Tregaron	880	74	52.219968925549765, -3.9341838213978906	11.4	21	Sainsbury's Lampeter	10.9	20	0.25	19	56	819	808			
lsoa2021:W01000506 : Ceredigion 005A	801.5	4	Aberaeron Henfynyw Ffos-y-ffin	Aberaeron - 1,274 (2021) 1,422 (2011) Henfynyw - 315 (2021) 512 (2011) Ffos-y-ffin - 257 (2021)	Aberaeron	1274	108	52.243009815093565, -4.257702718290015	13.9	29	Costcutter Aberaeron	0.2	2	-5.88	0	108	20	20			
lsoa2021:W01000524 : Ceredigion 005B	47.9	4	Llwyncelyn Neuadd-Lwyd Ciliau Aeron Cilcennin Llangwyryfon	Llwyncelyn - 324 (2021) Neuadd-Lwyd Ciliau Aeron - 854 (2021) 929 (2011) Cilcennin - 262 (2021) Llangwyryfon - 556 (2021) 596 (2021)	Ciliau Aeron	854	72	52.209510271172086, -4.1948426008911595	9.6	19	Costcutter Aberaeron	4.3	12	-1.08	0	72	309	309	0	393	0.0
lsoa2021:W01000538 : Ceredigion 005C	25.9	4	Llanddeiniol Llanrhystud Pennant	Llanddeiniol - 281 (2021) Llanrhystud - 355 (2021) 646 (2011) Pennant	Llanrhystud	355	30	52.305794870594646, -4.144420653335614	16.0	27	Costcutter Aberaeron	7.0	14	-1.86	0	30	211	211			
lsoa2021:W01000539 : Ceredigion 005D	25.0	4	Cross Inn Moelfryn	Cross Inn - 310 (2021) 292 (2011) Moelfryn	Cross Inn	292	25	52.25594783346582, -4.134906349870004	12.1	21	Costcutter Aberaeron	6.1	13	-1.22	0	25	150	150			
lsoa2021:W01000540 : Ceredigion 005E	91.4	4	Aberarth Llannon Llwyndafydd Caerwedros	Aberarth - 235 (2021) Llannon - 835 (2021) 869 (2011) Llwyndafydd - 228 (2021) Caerwedros - 219 (2021)	Llannon	835	71	52.28175136695704, -4.177258615235214	15.5	29	Costcutter Aberaeron	4.8	11	-3.17	0	71	342	342			
lsoa2021:W01002002 : Ceredigion 007E	37.8	4	Llanllwchaiarn New Quay Synod Inn Talgarreg	Llanllwchaiarn - 848 (2021) 848 (2011) New Quay - 1,045 (2021) 694 (2011) Synod Inn - 280 (2021) Talgarreg - 308 (2021)	New Quay	1045	88	52.21400562356388, -4.361690527321546	18.0	35	Costcutter New Quay	0.2	1	-7.20	0	88	22	22			
W01000688 : Carmarthenshire 003B	89.6	5	Llangeler Drefach Pont-Tywell Pentrecagal Waungilwen	Llangeler - 3,427 (2021) 3,427 (2011) Drefach - 305 (2021) Pont-Tywell Pentrecagal - 344 (2021) Waungilwen - 720 (2021) 1,338 (2011)	Llangeler	3427	289	52.02914994100513, -4.3719149582951955	17.4	31	CK Foodstores Llandysul	4.3	9	-3.53	0	289	1241	1241	0	718	0.0
W01000689 : Carmarthenshire 003C	41.8	5	Cwmpengraig Saron Rhos Tresaith	Cwmpengraig Saron - 909 (2021) 867 (2011) Rhos Tresaith - 288 (2021)	Waungilwen	720	61	52.026268696722944, -4.4120239784849735	18.7	34	CK Foodstores Llandysul	7.2	14	-3.64	0	61	438	438			
lsoa2021:W01000545 : Ceredigion 007D	37.2	5	Llangrannog Brynhoffnant Sarnau	Llangrannog - 703 (2021) 775 (2011) Brynhoffnant Sarnau - 288 (2021)	Llangrannog	703	59	52.15870686189735, -4.463198013896373	20.8	39	Costcutter New Quay	10.6	21	-3.44	0	59	627	627			
lsoa2021:W01000522 : Ceredigion 010B	19.7	5	Pontsian Llandyfriog	Pontsian - 240 (2021) Llandyfriog - 1,763 (2021) 1,835 (2011)	Pontsian	240	20	52.09205176465116, -4.280778054927125	10.4	19	CK Foodstores Llandysul	4.1	11	-1.14	0	20	83	83			
lsoa2021:W01000531 : Ceredigion 010C	59.1	5	Newcastle Emlyn Pont Ceri	Newcastle Emlyn - 1,840 (2021) 1,883 (2011) Pont Ceri	Newcastle Emlyn	1840	155	52.03715419669625, -4.4694789379545625	19.6	37	CK Foodstores Llandysul	8.3	16	-4.33	0	155	1294	1294			
lsoa2021:W01000533 : Ceredigion 010D	227.1	5	Llandysul Pentrellwyn Rhydlewis	Llandysul - 1,320 (2021) 1,484 (2011) Pentrellwyn - 188 (2021) Rhydlewis - 257 (2021)	Llandysul	1320	111	52.04166902155597 5, -4.309290915391707	13.7	26	CK Foodstores Llandysul	0.7	3	-4.28	0	111	83	83			
lsoa2021:W01000551 : Ceredigion 010E	42.3	5	Coed-y-bryn Brongest	Coed-y-bryn - 271 (2021) Brongest - 252 (2021)	Rhydlewis	257	22	52.10009933577843, -4.41440497867786	18.3	32	CK Foodstores Llandysul	7.6	14	-3.13	0	22	166	166			
						24,664	2,083										11396	11518	539	2083	

Total Mileage from Table	Mileage to Usual Store	Mileage to Proposed Store	
Zone 1 Total Mileage	2516.4	2329.7	-186.8
Zone 2 Total Mileage	1653.0	1632.5	-20.5
Zone 3Total Mileage	2361.8	2447.6	85.8
Zone 4 Total Mileage	1053.7	1053.7	0.0
Zone 5 Total Mileage	3932.7	3932.7	0.0
Total Mileage per day	11517.6	Total Mileage per day	11396.1 -121.5
		Total Mileage Saved per da	122
		Total Mileage Saved per annu	44358

		Other Food Stores	Coordinates
Lower Threshold	Zone 1	Sainsbury's Lampeter	52.1137003358599, -4.080116390994613
Higher Threshold		Co-op Lampeter	52.10958146171355, -4.074154476393864
	Zone 2		
	Zone 3		
	Zone 4	Costcutter Aberaeron	52.24253806123297, -4.259344030277361
		Costcutter New Quay	52.2115837628575, -4.359888077750695
	Zone 5	Spar Llandysul	52.041129862331246, -4.309680433936378
		CK Foodstores Llandysul	52.037272615191355, -4.313282038243657
	Outside of Zones	Aldi Carmarthen	51.84951557750697, -4.307598959373488
		Lidl Carmarthen	51.85477086661124, -4.31215367697342
		Lidl Aberystwyth	52.41409055226601, -4.08075738230074
		Morrisons Carmarthen	51.84609852674021, -4.307540923099508
		Morrisons Aberystwyth	52.40466189770661, -4.0675473636413
		Tesco Extra Carmarthen	51.8534886819222, -4.317299560631566
		Tesco Superstore Aberystwyth	52.41221628659085, -4.082757468396328

Proposed Lidl Store	Coordinates
Lidl Lampeter	52.10623094204795, -4.071320048061141

LSOA Boundary/Area	Population Density (person/km)	Zone	Residential Areas Within Boundary	Population of Residential Areas Within Boundary	Population Centre Location	Population of Centre Location	Trips from Zone	Coordinates	Distance to Proposed Lidl (Miles)	Journey time to Proposed Lidl (Minutes)	Chosen Other Food Store	Distance to Other Food Store (Miles)	Journey Time to Other Food Store (Minutes)	California Diversion Curve	Transfer to Lidl	Remain at Existing	Post-Lidl opening veh mileage	Pre-opening veh mileage	Total trips transfer-ing to Lidl	Total Trips to all foodstor	Transfer Trips by Zone as proporto
W01000701 : Carmarthenshire 001C	24.3	1	Pencarreg Cwmann	Pencarreg - 1,243 (2021) 1,169 (2011) Cwmann - 975 (2021)	Pencarreg	1,243	105	52.084952900528165, -4.139474203058018	3.5	6	Sainsbury's Lampeter	4.5	10	1.14	105	0	365	470	390	653	5.9
W01000702 : Carmarthenshire 001D	220.7	1	Llanbydder	Llanbydder - 1,638 (2011)	Llanbydder	1,638	138	52.074915255769945, -4.157796976671026	4.6	9	Sainsbury's Lampeter	5.5	11	0.96	132	6	642	765			
lsoa2021:W01000527 : Ceredigion 008A	1,207.5	1	Lampeter	Lampeter - 2,505 (2021) 2,970 (2011)	Lampeter	2505	212	52.112929139298416, -4.078540456543687	0.6	2	Sainsbury's Lampeter	0.4	2	0.46	97	115	110	92			
lsoa2021:W01000528 : Ceredigion 008B	115.7	1					0														
lsoa2021:W01000535 : Ceredigion 008C	27.5	1	Outskirts of Lampeter Temple Bar Felinfach Ystrad Aeron Dihewyd Talsarn Felindre Llwyn-y-groes Llangybi	Outskirts of Lampeter Temple Bar Felinfach Ystrad Aeron - 625 (2021) 596 (2011) Dihewyd - 286 (2021) Talsarn - 284 (2021) Felindre - 337 (2021) Llwyn-y-groes Llangybi - 444 (2011)	Ystrad Aeron	625	53	52.1842522778655, -4.157997382225935	7.1	13	Sainsbury's Lampeter	6.6	12	0.25	13	40	355	348			
lsoa2021:W01000537 : Ceredigion 008D	19.1	1	Betw Bledrws Silian Llanfair Clydogau Cellan Llanwnnen	Betw Bledrws - 235 (2021) Silian - 327 (2021) Llanfair Clydogau - 174 (2021) Cellan - 174 (2021)	Llangybi	444	37	52.1582664555421, -4.0360651079323	4.8	10	Sainsbury's Lampeter	4.3	9	0.26	10	28	168	163			
lsoa2021:W01000541 : Ceredigion 008E	25.4	1	Capel-y-Groes Cwrtnewydd Capel St Silo Drefach Llanwenog Rhuddlan	Llanwnnen - 463 (2021) 490 (2011) Capel-y-Groes Cwrtnewydd - 233 (2021) Capel St Silo Drefach - 305 (2021) Llanwenog - 1,281 (2021) 1,364 (2011)	Llanwenog	1281	108	52.0867180306865, -4.199158120678501	6.6	13	Co-op Lampeter	6.3	12	0.31	34	75	689	679			
W01000647 : Carmarthenshire 002A	11.1	2	Llanwrda Llansadwrn Cilycwm Llansawei	Llanwrda - 287 (2011) Llansadwrn - 519 (2021) 517 (2011) Cilycwm - 487 (2011) 439 (2021) Llansawei - 438 (2021) 438 (2011)	Llansadwrn	519	44	51.966121220669415, -3.90235906610786	16.2	29	Co-op Lampeter	16.5	30	0.68	30	14	714	722	83	123	1.3
W01000650 : Carmarthenshire 002B	9.6	2	Pumsaint Caeo Ffarmers Salem	Pumsaint Caeo Ffarmers - 222 (2021) Salem - 396 (2021)	Llansawei	438	37	52.00777298803734, -4.0124826429220395	8.9	21	Co-op Lampeter	9.2	21	0.56	21	16	335	340			
W01000709 : Carmarthenshire 004D	27.3	2	Halfway Manordeilo Talley	Halfway - 283 (2021) Manordeilo - 325 (2021) Talley - 494 (2011) 459 (2021)	Talley	494	42	51.97599343614209, -3.993157517475135	13.9	24	Co-op Lampeter	14.2	26	0.78	32	9	583	591			
lsoa2021:W01000536 : Ceredigion 011E	9.0	3	Llangeitho Llanddewi Brefi Lledrod Swyddffynnon	Llangeitho - 741 (2021) 819 (2011) Llanddewi Brefi - 620 (2021) 640 (2011) Lledrod - 694 (2021) 735 (2011) Swyddffynnon - 368 (2021)	Llangeitho	741	63	52.21858636655301, -4.022653744332483	11.2	21	Sainsbury's Lampeter	10.6	20	0.25	16	47	674	665	49	196	0.7
lsoa2021:W01000542 : Ceredigion 011F	9.9	3	Ystrad Meurig Pontrhydfendigaid Strata Florida Ffair-rhos Ysbyty Ystwyth Pont-rhyd-y-groes	Ystrad Meurig - 368 (2021) 353 (2011) Pontrhydfendigaid - 312 (2021) Strata Florida Ffair-rhos - 396 (2021) Ysbyty Ystwyth - 434 (2021) 409 (2011) Pont-rhyd-y-groes - 191 (2021)	Lledrod	694	59	52.314544425231745, -3.9892006876140793	17.3	31	Lidl Aberystwyth	9.8	36	0.26	15	44	688	575			
lsoa2021:W01000550 : Ceredigion 011G	13.4	3	Tregaron	Tregaron - 880 (2021) 1,213 (2011)	Tregaron	880	74	52.219968925549765, -3.9341838213978906	11.4	21	Sainsbury's Lampeter	10.9	20	0.25	19	56	819	808			
lsoa2021:W01000506 : Ceredigion 005A	801.5	4	Aberaeron Henfynyw Ffos-y-ffin	Aberaeron - 1,274 (2021) 1,422 (2011) Henfynyw - 315 (2021) 512 (2011) Ffos-y-ffin - 257 (2021)	Aberaeron	1274	108	52.243009815093565, -4.257702718290015	13.9	29	Lidl Aberystwyth	15.9	2	0.13	15	93	1681	1711			
lsoa2021:W01000524 : Ceredigion 005B	47.9	4	Llwyncelyn Neuadd-Lwyd Ciliau Aeron Cilcennin Llangwyryfon	Llwyncelyn - 324 (2021) Neuadd-Lwyd Ciliau Aeron - 854 (2021) 929 (2011) Cilcennin - 262 (2021) Llangwyryfon - 556 (2021) 596 (2021)	Ciliau Aeron	854	72	52.209510271172086, -4.1948426008911595	9.6	19	Sainsbury's Lampeter	9.0	12	-0.06	0	72	649	649	26	393	0.4
lsoa2021:W01000538 : Ceredigion 005C	25.9	4	Llanddeiniol Llanrhystud Pennant	Llanddeiniol - 281 (2021) Llanrhystud - 355 (2021) 646 (2011) Pennant	Llanrhystud	355	30	52.305794870594646, -4.144420653335614	16.0	27	Lidl Aberystwyth	9.2	14	-2.60	0	30	276	276			
lsoa2021:W01000539 : Ceredigion 005D	25.0	4	Cross Inn Moelfryn	Cross Inn - 310 (2021) 292 (2011) Moelfryn	Cross Inn	292	25	52.25594783346582, -4.134906349870004	12.1	21	Lidl Aberystwyth	13.2	13	0.24	6	19	318	325			
lsoa2021:W01000540 : Ceredigion 005E	91.4	4	Aberarth Llannon	Aberarth - 235 (2021) Llannon - 835 (2021) 869 (2011)	Llannon	835	71	52.28175136695704, -4.177258615235214	15.5	29	Lidl Aberystwyth	11.3	11	-0.75	0	71	797	797			
lsoa2021:W01002002 : Ceredigion 007E	37.8	4	Llwyndafydd Caerwedros Llanllwchaiarn New Quay Synod Inn Talgarreg	Llwyndafydd - 228 (2021) Caerwedros - 219 (2021) Llanllwchaiarn - 848 (2021) 848 (2011) New Quay - 1,045 (2021) 694 (2011) Synod Inn - 280 (2021) Talgarreg - 308 (2021)	New Quay	1045	88	52.21400562356388, -4.361690527321546	18.0	35	Cardigan (Aldi, Tesco)	19.2	1	0.07	6	82	1687	1695			
W01000688 : Carmarthenshire 003B	89.6	5	Llangeler Drefach Pont-Tywell Pentrecagal	Llangeler - 3,427 (2021) 3,427 (2011) Drefach - 305 (2021) Pont-Tywell Pentrecagal - 344 (2021)	Llangeler	3427	289	52.02914994100513, -4.3719149582951955	17.4	31	Cardigan (Aldi, Tesco)	15.6	30	0.04	11	278	4535	4515	57	718	0.9
W01000689 : Carmarthenshire 003C	41.8	5	Waungilwen Cwmpengraig Saron Rhos Tresaith	Waungilwen - 720 (2021) 1,338 (2011) Cwmpengraig Saron - 909 (2021) 867 (2011) Rhos Tresaith - 288 (2021)	Waungilwen	720	61	52.026268696722944, -4.4120239784849735	18.7	34	Cardigan (Aldi, Tesco)	14.1	27	-1.19	0	61	857	857			
lsoa2021:W01000545 : Ceredigion 007D	37.2	5	Llangrannog Brynhoffnant Sarnau	Llangrannog - 703 (2021) 775 (2011) Brynhoffnant Sarnau - 288 (2021)	Llangrannog	703	59	52.15870686189735, -4.463198013896373	20.8	39	Cardigan (Aldi, Tesco)	12.1	21	-3.61	0	59	718	718			
lsoa2021:W01000522 : Ceredigion 010B	19.7	5	Pontsian	Pontsian - 240 (2021)	Pontsian	240	20	52.09205176465116, -4.280778054927125	10.4	19	Sainsbury's Lampeter	9.8	18	0.23	5	16	202	199			
lsoa2021:W01000531 : Ceredigion 010C	59.1	5	Llandyfriog	Llandyfriog - 1,763 (2021) 1,835 (2011)	Newcastle Emlyn	1840	155	52.03715419669625, -4.4694789379545625	19.6	37	Cardigan (Aldi, Tesco)	11.0	21	-3.27	0	155	1709	1709			
lsoa2021:W01000533 : Ceredigion 010D	227.1	5	Newcastle Emlyn Pont Ceri Llandysul Pentrellwyn	Newcastle Emlyn - 1,840 (2021) 1,883 (2011) Pont Ceri Llandysul - 1,320 (2021) 1,484 (2011) Pentrellwyn - 188 (2021)	Llandysul	1320	111	52.041669021555975, -4.309290915391707	13.7	26	Co-op Lampeter	13.6	25	0.37	41	70	1519	1516			
lsoa2021:W01000551 : Ceredigion 010E	42.3	5	Rhydlewis Coed-y-bryn Brongest	Rhydlewis - 257 (2021) Coed-y-bryn - 271 (2021) Brongest - 252 (2021)	Rhydlewis	257	22	52.10009933577843, -4.41440497867786	18.3	32	Cardigan (Aldi, Tesco)	12.3	21	-2.14	0	22	267	267			
						24,664	2,083										21358	21452	605	2083	

Total Mileage from Table	Mileage to Usual Store		Mileage to Proposed Store	
Zone 1 Total Mileage	2516.4		2329.7	-186.8
Zone 2 Total Mileage	1653.0		1632.5	-20.5
Zone 3Total Mileage	2048.5		2179.8	131.3
Zone 4 Total Mileage	5451.9		5408.5	-43.3
Zone 5 Total Mileage	9782.0		9807.6	25.6
Total Mileage per day	21451.8	Total Mileage per day	21358.1	-93.7
		Total Mileage Saved per day	94	
		Total Mileage Saved per annur	34214	