IN THE MATTER		of applications pursuant to the Resource Management Act 1991
BY		**Foodstuffs North Island Limited**
FOR		Resource consent for the construction and operation of a new supermarket with an associated drive through fuel facility including car parking and all other enabling works.

STATEMENT OF EVIDENCE (Retail Economics Modelling)

SUSAN MICHELLE FAIRGRAY

29 April 2019

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1   INTRODUCTION

Qualifications

1.   My Name is Susan Michelle Fairgray. I have a Master of Science with first class honours in geography. I am a senior consultant at Market Economics Ltd (M.E), an independent research consultancy.

Experience

2.   I have 13 years' experience working in the field of urban economics. My policy and project experience has covered major commercial, industrial and residential sectors, and key infrastructure. It includes a specialisation in retail analysis and the effects of retail on urban form. I have worked in both the public and private sectors, working for commercial and public sector clients. These have involved a wide range of studies and analyses across many of the Region's and local territorial authority areas within New Zealand.

3.   I have a good understanding of the urban spatial economic structure of Hamilton City and how it functions within the surrounding Waikato Region. I have undertaken a large volume of work within Hamilton City and the surrounding Waikato Region districts for a range of private and public sector clients. Of particular relevance to this case, this includes:

   a.   Analysis for Hamilton City to meet the requirements under the National Policy Statement for Urban Development Capacity (NPS-UDC). This involved a large and comprehensive study of urban development capacity and future demand for urban location within Hamilton City and the surrounding Future Proof Area (Waikato and Waipa districts).

   b.   Numerous assessments of resource consent applications for commercial developments and land uses within Hamilton City's retail and office markets.

   c.   Analysis of future growth in retail spending patterns and household demand within Hamilton City and the surrounding Waikato Region area and how this translates into demand for retail space within Hamilton City.

4.   Prior to my employment at M.E, I was employment at Auckland Council for ten years, most recently as a Senior Research Economist. During this time I undertook a large amount of analysis within the retail sector, including Auckland's retail sector as well as assessment of national and international trends, and retail development within other parts of New Zealand.

5.   I produced the *Auckland Retail Economic Evidence Base*[1] for Auckland Council to inform the Auckland Unitary Plan hearings and appeared as an expert witness on retail economics from Auckland Council. In constructing the evidence base, I assisted with the development of the retail provisions within the Auckland Unitary Plan.

Code of Conduct

6.   I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and have complied with that practice note in preparation of this evidence. I agree to comply with it in presenting evidence at this hearing. The evidence that I give is within my area of expertise, except where I have stated my reliance on other identified evidence. I have considered all material facts that are known to me that might alter or detract from the opinions that I express in this evidence.

2   SCOPE OF EVIDENCE

7.   Foodstuffs North Island Ltd have applied to Hamilton City Council (HCC) for consent to locate a PAK'n SAVE supermarket in the Industrial Zone on Te Rapa Road opposite The Base Sub-Regional Centre. The planned supermarket would have 6,358m^2 of gross floor area (GFA) and would occupy a 2ha site.

8.   Market Economics Ltd was commissioned by HCC to undertake analysis to assist Council in understanding the likely economic effects of the proposal. I undertook that assessment, specifically economic modelling to estimate the likely retail distributional effects of the proposal on Hamilton City's business centres hierarchy. This included assessment of the potential effects on household travel efficiency resulting from any changes to the distribution of retail capacity across Hamilton.

9.   My assessment was to provide information to assist in determining whether the proposal complies within Rule 9.5.4 (ii) of the ODP:

> *"a.) Resource consent applications for new supermarkets in the Industrial Zone must provide a Centre Assessment Report, in accordance with section 1.2.2.17 (Information Requirements), which:*
> > *ii. demonstrates that the proposal will not undermine the role and function of other centres within the localised catchment in the business hierarchy."* (ODP, p9-16).

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[1] Fairgray, S. 2013 *Auckland retail economic evidence base,* Auckland Council technical report, TR2013/046.

10. The ODP does not contain a set of criteria which defines thresholds to show the "undermining" of a centre. My assessment therefore considers how the centres within the business hierarchy are likely to function if the proposed development were to occur and how this aligns with the objectives and policies for the business centres hierarchy set out in the ODP. This is to identify whether the centres would continue to perform their defined roles in the centres hierarchy.

11. Hamilton City has a 6-tier urban centres hierarchy. As set out in the Operative District Plan, the hierarchy is as follows:

    a. Tier 1 = The Central City. "The Central City of Hamilton is the heart of the Waikato region. It is the primary centre for commercial, civic and social activities, and is the region's cultural and recreational hub (ODP, p7-1)".

    b. Tier 2 = Sub-Regional Centres. The Base forms the primary sub-regional centre, with Chartwell as the secondary sub-regional centre. Sub-regional centres serve wide geographic areas and "provide for an integrated pattern of diverse activities which principally include retail activities in a mix of mall and small scale speciality stores, offices, large format retail, limited offices, community services, entertainment facilities and some visitor accommodation with easy access to the strategic transport network (ODP, p6-5)".

    c. Tier 3 = Suburban Centres. There are 10 suburban centres located within the city's residential neighbourhoods. These include Rototuna, Five Cross Roads, Hillcrest (2), Hamilton East, Glenview, Dinsdale, Frankton, Nawton and Rotokauri (future). "Suburban centres anchor the City's main residential areas and provide a range of activities and services that can reduce reliance on car travel for meeting day-to-day requirements. These centres provide multi-purpose destinations for customers. Parking is provided onsite and these centres are generally well served by passenger transport (ODP, p6-7)".

    d. Tier 4 = Neighbourhood Centres. There are a large number of neighbourhood centres located across Hamilton City. These are small centres in residential areas that "provide a limited range of everyday goods and services and essentially serve a walk-in population. … The anchor store is likely to be a superette (ODP, p6-8)".

    e. Tier 5 = Localised activity in the Events Facilities Zone.

    f. Tier 6 = Agglomerations of activities within the Commercial Fringe Zones.

12. An overall economic assessment of effects, in my opinion, normally takes account of the *direction* and scale of effects in relation to the provisions of the Plan. The *scale* of effects indicates the significance of likely change from a

development. The *direction* of the effects identifies consistency or otherwise with Plan provisions, especially whether the likely development and centres pattern contributes to the Plan objectives for the centres network. This is because urban form outcomes affecting the centres network and how a city functions develop incrementally and cumulatively over time through the aggregate effects of many land use decisions. It is rare for an individual development by itself to have sufficiently large effects to undermine an existing centre, yet in combination with other land use decisions, the pattern of development is a significant driver of urban form and function through time.

13. However, the scope of my work commissioned by HCC has been specifically limited to an examination of the likely *scale* of the direct effects on centres to satisfy the information requirements of Rule 9.5.4(ii) to inform the overall planning assessment by HCC of the proposal. I understand that this assessment is one part of the information taken into account within the planning report, which will include an assessment of the consistency of the proposal in relation to the objectives and policies of the Plan.

14. I am familiar with site location and have a good understanding of the relative positioning of the site within Hamilton's spatial urban economic structure. I have specifically visited the site in April 2019, and have visited The Base, the adjacent Sub-Regional centre, on many (over 4) occasions within the past year.

15. The purpose of this statement of evidence is to address matters raised in the application relating to retail distributional modelling to calculate the scale of the effect of the proposed supermarket on supermarkets within other centres.

16. My evidence covers a review and assessment of the retail distributional modelling contained in the applicant's CAR. It then provides my retail distributional modelling undertaken in relation to the proposed store. The remaining main sections in my evidence are as follows:

   a. Background Context
   b. Technical Assessment of Centres Assessment Retail Economic Retail Distributional Modelling
   c. Hamilton City Urban Structure and Supermarket Market
   d. Retail Economic Modelling in Hamilton City – Methodology and Modelled Scenarios
   e. Retail Economic Modelling – Results
   f. Travel Efficiency and Household Enablement

g. Changes in Hamilton City Household Travel Efficiency

h. Conclusions

17. In preparing this evidence I have reviewed the following:

a. Property Economics Ltd, 2018 *PAK'N SAVE TE RAPA RETAIL ECONOMIC IMPACT ASSESSMENT,* prepared for Foodstuffs North Island, June 2018 ("the Centres Assessment Report" (CAR)).

b. s92 response received 31 August 2018;

c. s92 response received 23 October 2018.

3   BACKGROUND CONTEXT

Resource Consent Key Details

18. The resource consent application by Foodstuffs to Hamilton City Council (HCC) is to locate a PAK'n SAVE supermarket of 6,358m^2 GFA on a 2ha site.in the Industrial Zone on Te Rapa Road opposite The Base Sub-Regional Centre.

19. The proposed supermarket would be situated opposite the existing Countdown supermarket and other large format retail (including Kmart) which is located in the Business 4 Large Format Retail Zone adjacent to the Business 3 Sub-Regional Centre Zone of The Base. It would be likely to function as part of the retail grouping together with The Base and the large format retail, and would increase the overall size of the retail hub in northern Hamilton City.

20. Within the Industrial Zone, the proposed supermarket is considered either a Restricted Discretionary Activity or a Non-Complying Activity, the status depending on its likely effects on other centres in Hamilton's business centres hierarchy. In accordance with the Hamilton City Operative District Plan (ODP), the applicant has submitted a Centres Assessment Report (CAR)[2] to present the economic effects of the proposal.

Technical Assessment Process

21. I was commissioned by HCC to provide technical input on the CAR for the application. A key issue was to determine whether sufficient information has been provided to understand the likely effects of the proposal on other centres within Hamilton's centres hierarchy. As part of this process, I met with the author of the CAR, together with the applicants' representatives and other staff from M.E, on

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[2] Property Economics Ltd, 2018. *PAK'N SAVE TE RAPA RETAIL ECONOMIC IMPACT ASSESSMENT,* prepared for Foodstuffs North Island, June 2018.

11 September 2017, prior to the CAR analysis being undertaken, to identify the relevant issues to be addressed within the economic assessment.

22. The technical assessment identified a number of issues with the CAR and was used to inform a Section 92 Further Information Request (FIR) that was made to the applicant. An initial response[3] to the FIR was provided by the applicants' economic advisor on 31 August 2018. On 20 September 2018, other M.E staff and I met with the applicants' planner and economic advisor to have a technical discussion of the points raised in the FIR and the initial response.

23. Following the technical discussion, Hamilton City Council provided four points in an email (27 September 2018) that clarified the outstanding information requirements. Key among these, for the current assessment, were:

    a. *"Point A: The distribution of supermarket spending demand by census area unit (CAU) within the proposed stores catchment area and the other centres catchments which are likely to be affected by the proposal."*

    b. *"Point B: The share of spend from each CAU which has been attributed to each centre with and without the proposed Pak 'N Save – i.e. a breakdown of how the spending flows are being redistributed with the proposal. If the applicant's advisor does not have these % split distributions of spend at the CAU level, we would need to know please the spatially defined areas of catchment overlap (which may be aggregations of CAUs) and how the spend (i.e. household demand) within these areas is distributed across the different centre destinations."*

24. On Monday 29 October 2018 I received, from Hamilton City Council, a further response[4] from the applicant's economic advisor on the points contained within the FIR, which had yet to be satisfied.

25. On 1 November 2018 I provided a technical assessment[5] of the additional economic information received by the applicant. I considered that key information on the likely effects of the proposal was still outstanding. This primarily related to the retail distributional effects across the centres hierarchy, which is an important part of understanding the effects of the proposal. No further information was subsequently provided by the applicant.

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[3] Property Economics Ltd, 2018 *RE: Proposed PNS Te Rapa – S92 FIR – Initial Economic Response,* letter to Foodstuffs North Island Limited, 31 August 2018.

[4] Property Economics Ltd, 2018 *RE: PROPOSED PNS TE RAPA – S92 FIR – ADDITIONAL ECONOMIC RESPONSE,* letter to Foodstuffs North Island Limited, 23 October 2018.

[5] M.E Ltd, 2018 *Re: Assessment of Section 92 Response – Te Rapa Pak 'N Save,* memo to Hamilton City Council, 1 November 2018.

4   TECHNICAL ASSESSMENT OF CENTRES ASSESSMENT RETAIL ECONOMIC RETAIL DISTRIBUTIONAL MODELLING

Centres Assessment Report Retail Distributional Modelling Key Assumptions and Findings

26.   The following are the key assumptions used within the CAR that relate directly to the economic retail distributional modelling. A full summary of the CAR key assumptions and main conclusions, and my assessment of the CAR are contained within the my technical assessment (M.E 9 August 2018 report) and within my report submitted to HCC in final version on 29 April 2019:

   a.   The proposed store will have annual sales of $60m.

   b.   The store will draw from an extensive geographic area. The catchment area is assumed to be similar to The Base Sub-Regional centre, albeit with the southern edge limited by the primary catchment of the existing Mill Street Pak 'N Save store.

   c.   A total annual demand (i.e. total market size) for Hamilton City supermarkets of $713 million. This includes demand from outside of the city that is met at supermarkets within Hamilton.

   d.   The CAR calculates that demand within the core catchment area of the proposed store can currently sustain 27,700m2 of supermarket floorspace, increasing by 15,000m2 to 42,700m2 by 2038. This is based off a floorspace productivity of $8,760 per m2. Although not directly stated within the CAR, if the same floorspace productivity were applied to the CAR total Hamilton City market, it suggests that the market could currently sustain an additional 30,000m2 of supermarket floorspace.

27.   Using the above assumptions, the CAR has estimated the supermarket sales within each centre under the existing supermarket supply structure and with the addition of the proposed store. These are summarised in the following table:

Table 1: CAR Estimated Supermarket Sales With and Without the Proposed Store

CENTRE	Estimated Revenue ($m pa)	Estimated Sales Post Diversion ($m pa)
The Base	$50	$95
Rototuna	$95	$84
Nawton	$30	$28
CBD	$205	$188

Source: Property Economics Ltd, 2018

28. The following percentage impacts on supermarket sales can be calculated from the before and after sales estimates contained within the CAR:

   a. The Base (Countdown and New World): -30% sales impact, with a net reduction of $15m sales. This makes up 25% of sales at the new store.

   b. Rototuna (Countdown and New World): -12% sales impact, with a net reduction of $11m sales. This makes up 18% of sales at the new store.

   c. Nawton (Countdown): -7% sales impact, with a net reduction of $2m sales. This makes up 3% of sales at the new store.

   d. CBD (Mill Street and Clarence Street Pak 'N Save stores only, excluding CBD Countdown stores): -8% sales impact, with a net reduction of $17m sales. This makes up 28% of sales at the new store.

29. The CAR outlines that the current sales ($50 million) at The Base are from the existing Countdown and New World stores. The sales estimate of $95 million for The Base contains the estimated $60 million of sales at the proposed Pak 'N Save store. Removing this component, the sales at the existing supermarkets would become $35 million combined (i.e. $95 million less $60 million sales at the proposed store). It is noted that elsewhere in the CAR, the supermarket sales within the Te Rapa CAU are stated to currently be $107 million. The difference between this figure and the $50 million contained within the table is not explained within the CAR.

30. The CAR further concludes that any diversion of spending flows to the proposed supermarket will not cause any effects beyond trade competition, and that they would be insufficient to result in the closure of any existing supermarkets within centres and not affect the viability of the centres or disenable the communities they serve.

Main Findings from Technical Assessment of CAR Retail Distributional Modelling

31. My technical assessment identified a number of issues with the CAR retail economic assessment. This section details the main findings in relation to the retail distributional modelling. A full technical assessment of the CAR is available in my final report.

32. Overall, my assessment found that the CAR did not contain sufficient detail to establish the likelihood of the effects on other centres stated within the CAR. There was no estimation contained within the CAR on how spending flows within different parts of the catchment areas have been allocated to different supermarkets and how these may change with the addition of the proposed

store. This is a key part of determining the likely redirection of sales (retail distributional modelling) from each centre to the proposed store.

33. My assessment also considered that a number of the key assumptions on sales levels and floorspace productivity of the proposed store, total market growth, and future sustainable floorspace were not supported by the information available on the Hamilton supermarket market.

34. I consider that this information is an important part of understanding the effects of the proposal. The overall estimation of effects on existing supermarkets is sensitive to how this allocation of spending has occurred. Changes in this allocation, together with differences in floorspace productivity, may to yield substantially different results in relation to the effects on other centres.

Floorspace Growth

35. The figures presented in the CAR (Table 1 and Table 2 of the CAR) show that floorspace productivity for supermarket sales has been calculated at a rate of $8,760 per m^2 per annum. The CAR has used this to then calculate that 27,700m^2 of supermarket floorspace can currently be sustained by the core catchment area, and that this would increase to 42,700m^2 by 2038 – a net increase of 15,000m^2, of +54% (Table 1 in the CAR).

36. At the total Hamilton City level, the projected demand growth implies an increase of 30,300m^2 GFA of sustainable supermarket floorspace over the period 2018 to 2038. The sustainable supermarket floorspace in Hamilton City would increase by 41,300m^2 GFA if additional demand from the towns, rural and peri-urban areas around Hamilton is included. This is implied but not stated in the CAR.

37. This level of growth would represent an increase of 81% in sustainable supermarket floorspace in Hamilton over the next 20 years. This is more than double the projected 33% increase in households over the same period.

38. To illustrate this increase in floorspace in terms of supermarkets "on the ground", I consider that the CAR implies that demand growth within the Hamilton market could support another 7 Pak 'N Save supermarkets (of the same scale 6,358m^2 as that proposed) over the next 20 years. This compares to the existing 14 supermarkets within Hamilton City.

Sales Productivity

39. The CAR sales productivity estimate is $8,760 per m^2 for supermarkets (implied from Tables 1 and 2 in the CAR). This sales productivity is assumed to remain unchanged over the 2018 to 2038 period.

40. I consider that a rate of $8,760 per m2 is significantly too low. My understanding of the supermarket sector suggests that floorspace productivity for urban supermarkets typically falls within a range of $11,000 to $18,000 per m^2, and higher productivities in higher value, busier locations. I consider that the Hamilton market is a reasonably strong market with a well-established urban economy, meaning that there is no evidence to support a substantially lower floorspace productivity. At the city level, based on information on total Hamilton supermarket floorspace and estimated supermarket spend, I estimate supermarket floorspace productivity to be around at least $11,000 to $13,000 per m^2 overall (where the figure will be greater if a net surplus of spending from outside of the city is included in the calculation).

41. In my view, it is unclear why a floorspace productivity of $8,760 per m^2 has been selected within the CAR analysis. I consider that it is not consistent with the calculations contained within the CAR itself, which suggests that total Hamilton City supermarket sales are currently around $713m annually[6]. The floorspace of the supermarkets of over 1,000m^2 GFA in Hamilton City (which concords with the map of supermarkets – Figure 1 of the CAR) is estimated at around 51,000m^2. On this basis, the CAR estimate of $713m of sales would represent floorspace productivity of around $14,000 per m^2. If the $8,760 per m2 floorspace productivity figure is accurate, then in my view that would imply that the Hamilton market would currently be able to sustain a further 31,000 m^2 of supermarket floorspace – i.e. the equivalent of another 5 Pak 'N Save supermarkets. If this current "shortfall" were added to the implied market growth equivalent to 7 more Pak 'N Save's, then that would suggest that a total of 12 more Pak 'N Save's or equivalent supermarkets could be sustained in Hamilton City by 2038.

42. No further information has been included within the CAR as to why the proposed supermarket, and others within Te Rapa, would perform at a rate substantially below the city level average.

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[6] This is based on applying the formula in footnote 5 of the CAR to the figures contained in Table 2 of the CAR to identify the total spend at supermarkets across Hamilton.

Future Sales Productivity

43.   The CAR analysis assumes that there will be no change in floorspace productivity through time. In my experience in the retail sector, productivity of retail floorspace increases gradually through time as the economy grows and land is used more intensively as scarcity grows and land value increases. I consider that an annual rate of floorspace productivity increase of between 0.5% and 1.0% per annum is appropriate to use for retail analysis.

44.   Overall, at the Hamilton City level, if my calculations of supermarket spend (higher than the CAR's) are applied (though still adopting the CAR assumption that an additional 35% of spend is drawn from surrounding areas[7]), but allowing for floorspace productivity to increase through time at a rate of 0.5% pa, then there would be an estimated increase of 21,700m^2 of supermarket floorspace at the city level out to 2038. This is around half of the estimated increase of 41,300m^2 which is implied by the CAR.

Supermarket Spending Diversion

45.   The CAR uses the above analysis to estimate the impact on other centres. The CAR approach is to calculate the retail re-distributional effects, in terms of the volume and shares of spend diverted from other centres as a result of the proposed supermarket. The CAR goes on to interpret these changes in spending flows in relation to their likely impacts on the viability and vitality of the centres.

46.   The new supermarket sales have been estimated by the CAR to be $60m annually, which equates to a floorspace productivity of $9,500 per m2. I consider that the floorspace productivity is likely to be higher, at around $15,700m[28]. Higher productivity would mean higher sales than estimated

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[7] I note that the CAR states that the Marketview data shows that the total spending in Hamilton City is equal to the total spending demand originating within Hamilton City, plus a further 35%. It is not clear whether this relates to an overall amount equivalent to 135% of Hamilton City catchment spend where allowance has been made for a share of Hamilton City demand to be met outside the region, in which case the ratio of sales to local vs. non-local customers would be different, or whether allowance still needs to be made for demand originating within Hamilton to be met elsewhere. The calculations within the CAR are based on the former, and therefore have also been applied in this way within my estimate given the stated source from Marketview data. My calculation is therefore also reliant on the accuracy of this assumption.

[8] I note that my earlier technical assessment considered a floorspace productivity of $13,000 per m2 to be appropriate. Our further analysis of the Hamilton supermarket market, including the assessment of empirical data on spending flows, suggests the updated floorspace productivity of $15,700 per m2 to be more appropriate.

(annual sales of around $100 million), and this would have flow-on impacts in relation to the level of sales diverted away from existing supermarkets.

47. Higher sales of $100 million p.a. compares to my estimated sales of $136 million for the Mill Street Pak 'N Save and $93 million at the Clarence Street Pak 'N Save. It would equate to a floorspace productivity of around $15,700/m2. This is around 20% to 30% lower than the floorspace productivities of the existing Pak 'N Save stores at $19,900/m2 (Clarence Street) and $22,800/m2 (Mill Street). It is 13% higher than the city-wide average floorspace productivity of around $14,000/m2.

48. The CAR does not provide details of the calculations used to determine the percentage impacts on other centres, and I have not been able to review their accuracy.

49. In similar vein, I consider that the CAR estimates based on the assumed sales productivity of the supermarket sector overall are likely to understate the scale of effects on other stores and centres. This is because the CAR estimates imply that substantial floorspace growth can be sustained in the Hamilton market because sales productivity would be low. To illustrate, at the $8,760 per m^2 productivity level assumed by the CAR, the market would sustain an additional 42,000 m^2 of supermarket space (by 2038). The proposed 6,385 m2 would represent only 15% of that total growth. However, at current levels of sales productivity, the market growth would sustain an increase of around 20,000 m^2, of which the proposed store would provide some 32%. This means the store's development would be more significant as an addition to the overall supermarket network.

50. In similar vein, if it were developed in the short term, the new store would represent an increase of around 11-12% in Hamilton's total supermarket floorspace (6,385 m^2 compared with some 51,000 m^2 currently). On this basis, the effects in terms of diverted trade and customer shopping travel would be in that order of magnitude (11-12% overall), and would be greater than that in the northern parts of Hamilton, and less than that in the southern areas.

Effects on Other Supermarkets

51. The CAR states that the closest supermarkets within Te Rapa (Countdown and New World) are likely to experience the greatest impact on sales. Countdown at Te Rapa is likely to experience the greatest impact, with an

estimated loss of $15m in sales annually, and New World, an estimated loss of $10m sales annually. The CAR states that the sales impact on New World can be disregarded as a direct trade competition effect. It also states that overall, the proposed supermarket would increase sales across The Base retail node (of which Countdown is considered collectively) as the supermarket would effectively function together with other retail in this location. Therefore, it concludes that the overall net trade impact for the centre is positive.

52. I agree that the largest impacts in relation to sales are likely to occur at these supermarkets as a function of their location relative to the proposed supermarket. I consider that the effect on the existing New World is less relevant given that it is located outside of the Sub-Regional Centre within the Industrial Zone and is therefore not contributing to achieving the objectives and policies of the Plan.

53. I generally agree that the proposed supermarket is likely to function together with existing retail in and around The Base. The CAR finds that the proposed supermarket will have a 7% impact on the City Centre supermarket sales. This is primarily a result of sales diversion away from the Mill Street Pak 'N Save on the edge of the City Centre. The CAR states that, once considered with the overall retail function of the City Centre, the impact would be less than 4%. They contend that this is therefore insignificant.

54. I agree that the Mill Street Pak 'N Save is likely to have a larger impact than the more southern Clarence Street Pak 'N Save located on the southern edge of the City Centre. The northern edge of the Clarence Street store main catchment area would already be formed as a result of the placement of the Mill Street store and would therefore not fall within the main trade area of the proposed store, which would instead alter mainly the northern extent of the Mill Street store catchment.

5 HAMILTON CITY URBAN STRUCTURE AND SUPERMARKET MARKET

55. Hamilton City is a key urban centre within the Waikato Region. In 2018, it had an estimated population of 169,300 people in 61,500 households. The city plays an important retail and service role for the surrounding districts as the largest urban centre in Waikato region. It is the main urban centre for around three-quarters of the people in adjacent Waikato District (75,000 people,

27,000 households) and Waipa District (54,000 people, 21,000 households) although Waipa has two substantial towns (Cambridge and Te Awamutu). Trade is also drawn from Otorohanga, Waitomo, Matamata-Piako, Hauraki and South Waikato districts.

56. Retail activity in Hamilton City primarily serves households in urban Hamilton and meets a significant share of demand from the surrounding areas. The catchments of Hamilton's larger centres extend considerable distances from Hamilton. These areas, particularly the Waikato and Waipa districts, thus also represent important areas of demand for Hamilton City. It is estimated that 70% of the sales at Hamilton City supermarkets originate from Hamilton City residents, with the other 30% from Waikato and Waipa district households, and other districts in Waikato region, and the rest of New Zealand.

57. The spatial structure of supermarket and grocery store demand from across these areas and how this translates into sales within supermarkets by location is shown in Table 2.

Table 2: Spatial Structure of Supermarket Demand and Sales, 2018

SALES DESTINATION	DEMAND ORIGIN				
	HAMILTON	WAIKATO	WAIPA	REST OF NZ	TOTAL
ESTIMATED DEMAND/SALES 2018 ($m)					
Hamilton Supermarkets	$497	$98	$46	$73	$713
Rest of Hamilton City	$57	$5	$3	$11	$76
Waikato District	$8	$78	$3	$25	$115
Waipa District	$10	$16	$154	$46	$225
Rest of New Zealand	$77	$57	$1	$18,464	$18,599
TOTAL	$650	$254	$206	$18,619	$19,728
SHARE OF ORIGIN DEMAND BY DESTINATION					
Hamilton Supermarkets	76%	39%	22%	0%	4%
Rest of Hamilton City	9%	2%	1%	0%	0%
Waikato District	1%	31%	1%	0%	1%
Waipa District	2%	6%	75%	0%	1%
Rest of New Zealand	12%	22%	0%	99%	94%
TOTAL	100%	100%	100%	100%	100%
SHARE OF DESTINATION SALES BY DEMAND ORIGIN					
Hamilton Supermarkets	70%	14%	6%	10%	100%
Rest of Hamilton City	76%	7%	3%	14%	100%
Waikato District	7%	68%	3%	22%	100%
Waipa District	4%	7%	68%	20%	100%
Rest of New Zealand	0%	0%	0%	99%	100%
TOTAL	3%	1%	1%	94%	100%

58. Hamilton City contains 14 main brand supermarkets (within the Countdown, New World and Pak 'N Save brands). They have a combined gross floor area

(GFA) of 51,000 m2[9]. These supermarkets range in size from smaller 1,500m2 stores in outer suburban areas up to the Mill Street Pak 'N Save store of 6,000m2 (with all other supermarkets below 5,000m2).

59. The existing main brand supermarkets have an estimated combined sales value of $713m, representing 90% of the total supermarket and grocery store sales that occur within Hamilton City. The remainder of sales occur in smaller grocery stores including smaller supermarkets (e.g. Four Square, Supervalue) as well as smaller grocery stores and dairies. The combined sales and floorspace area equates to an average floorspace productivity of around $14,000 per m2.

60. The proposed Pak 'N Save, at 6,358 m2, would be Hamilton City's largest supermarket. It would be nearly twice the average size of all Hamilton City's supermarkets, and more than four times the size of smaller New World supermarkets. Its large size and location, relatively central to a wide area of the surrounding Waikato Region, mean that it is likely to draw from a wide geographic area.

61. Hamilton City has an existing urban centres hierarchy with a range of different centre sizes, with corresponding roles and functions to serve the communities within their respective catchment areas.

62. Maintaining and supporting the centres hierarchy forms a core purpose of the District Plan. This reflects the key roles centres play in urban efficiency and sustainability, and in enabling the communities around them in the catchments they serve. They play an important social amenity role (in their centralised provision of social infrastructure), and as commercial centres businesses (including the productivity effects from agglomeration economies).

63. I consider that retail, including supermarkets, is a major driver of urban form and how the city expands, and plays a vital role in the success of centres. It influences other patterns of land use, particularly those contributing to the vitality and viability of centres. Supermarkets play an important anchor role, particularly in smaller centres that serve surrounding local communities. I note

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[9] The total floor area figure is an aggregation of the floorspace from each of the individual supermarkets. Floor areas for each supermarket were obtained from a combination of published floorspace figures and measurement of aerial photographs. My estimates of individual supermarket floorspace were very similar to those that were contained within with original CAR. For further information, refer to Section **Error! Reference source not found.**.

that most of Hamilton City's main supermarkets are located within centres or within the business zones adjacent to centres that effectively function together with the centre. There are a number of Hamilton centres, particularly in outer suburban locations, that are anchored by supermarkets. These include Rototuna, Nawton, Dinsdale, Hillcrest and Glenview.

6 RETAIL ECONOMIC MODELLING IN HAMILTON CITY – METHODOLOGY AND MODELLED SCENARIOS

64. Understanding the likely retail distributional effects of the proposal on Hamilton centres is a key part of assessing the potential effects on the centres hierarchy. The introduction of a large supermarket in the Te Rapa industrial area on a major arterial road and adjacent to an existing large node of retail activity, is likely to generate a large amount of sales and draw from an extensive geographic area. The scale and location of this supermarket, outside of the centres hierarchy, mean it may have effects on the surrounding centres network. This could occur through the customer supermarket access patterns that are drawn away from existing centres, where the reduction in activity within existing centres may have an impact on the role and function of the centre.

65. Consequently, I have constructed a retail gravity model that assesses how retail spending flows to supermarkets across the centres network may be redistributed with changes to the spatial supply of supermarkets in Hamilton City. I have constructed part of the model and have closely supervised other M.E staff who have constructed the rest of the model. At a high level, the model allocates demand that arises within each catchment[10] to sales at different supermarkets. It models how this distribution, and therefore sales, may change as a result of changes in the supermarket market.

66. Gravity modelling is long established and is consistent with the actual processes of peoples' shopping behaviour, and the critical drivers of that behaviour – the size and type of supermarket which largely determine its drawing power for consumers, and the effect of distance which largely determines the cost of visiting a supermarket, both in relation to other supermarkets within the network. The gravity or attractiveness aspect is

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[10] Within Hamilton City there are 308 catchments. The Waikato and Waipa Districts have each been divided within the model into 12 and 8 catchments respectively.

widely applied, for example in urban transport modelling where it is a core component (for example, Auckland Council's ART3 model for Auckland)[11]. As well as the strong conceptual basis, the Hamilton supermarket gravity modelling is underpinned by detailed empirical data on spatial spending flows that provide a very extensive information base on the key spatial interactions within Hamilton.

67. The model is constructed upon a series of gravity functions that take into account the size (attractiveness) of each store (sales), the distance decay rate of the store, and the road network distance of the store to each catchment and each other store. allows changes to be made to the supply-side spatial structure of supermarkets in Hamilton City. It then applies the gravity functions, together with the prescribed inputs (i.e. attractiveness and distance decay) of the new store, to re-optimise and reallocate the demand across the network of stores. A two-stage gravity model has been constructed to better reflect the complexities of the Hamilton supermarket market where significant shares of demand are attracted from the surrounding areas.

68. The core outputs of the model are the sales across each supermarket within Hamilton City before and after changes to the supply-side structure. Comparison of the sales values show the net and percentage impacts on each supermarkets sales as a result of the changes. The model also produces full sets of raw data spatial outputs. These are important for closer analysis of the results (especially during the calibration process) as well as the calculation of travel efficiency effects resulting from changes in the distribution of retail activity (and the corresponding consumer trips) across the supermarket network.

69. The following two scenarios of changes to the existing retail supply structure were modelled:

    a. The addition of the proposed store (6,358m2 GFA) to the existing supply structure. A total annual sales value of $100 million[12] has been assumed for the new store, and a distance decay rate similar to the existing Countdown Te Rapa store.

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[11] Fairgray, J.D.M. 2010 *Evidence of James Douglass Marshall Fairgray,* ENV-2010-CHC-00010, Kiwi Property Management Ltd and Kiwi Property Holdings Ltd vs. Christchurch City Council and Calco Developments Limited, 17 September 2010.
[12] This has been assumed to apply from the base year. It has been applied as an input into the model, with a final sales output of $97million once the optimisation process has occurred within the model.

b. The addition of the proposed store together with the closure of Nawton Countdown. This scenario shows how the sales would be redistributed across the existing store network, including the proposed store.

70. I consider the modelled annual sales value of $100million for the proposed store to be conservative. This is because it would be Hamilton's largest supermarket, and in a location with a large catchment area, but would have a lower sales value than the estimated sales of the smaller Mill Street Pak 'N Save ($136m). The modelled sales value of the proposed store would also equate to a floorspace productivity of around $15,700/m2. This is around 20% to 30% lower than the estimated floorspace productivities of the existing Pak 'N Save stores at $19,900/m2 (Clarence Street) and $22,800/m2 (Mill Street).

7   RETAIL ECONOMIC MODELLING - RESULTS
Scenario 1 – Addition of Proposed Store

71. The modelled results from the addition of the proposed store are summarised in Table 3. It shows the estimated sales of each main supermarket with and without the proposed store (columns 1 and 2). The net and percentage impacts of each supermarkets sales (columns 3 and 4) have been calculated from these, along with the changes in floorspace productivity (columns 6 and 7). The table also shows the share of the proposed stores sales accounted for from the net change in sales at each other supermarket (column 5).

Table 3: Modelled Retail Distributional Effects of Adding the Proposed Store with Sales of $100m, 2018

SUPERMARKET	SUBURB	ESTIMATED SALES ($m) BASE	SCENARIO	Impact on Sales %	Net	% Sales sourced from	FLOORSPACE PRODUCTIVITY (sales $/m2) BASE	SCENARIO
Countdown	Rototuna	$36	$31	14%	$ 4.94	5%	$10,000	$8,600
Countdown	Te Rapa	$39	$28	29%	$ 11.43	12%	$9,300	$6,600
Countdown	Chartwell	$38	$33	14%	$ 5.34	5%	$13,200	$11,300
Countdown	Nawton	$19	$16	15%	$ 2.91	3%	$6,700	$5,700
Countdown	Dinsdale	$45	$41	8%	$ 3.53	4%	$18,300	$16,900
Countdown	CBD	$46	$44	4%	$ 1.97	2%	$9,500	$9,100
Countdown	Bridge Street	$39	$38	4%	$ 1.62	2%	$9,300	$8,900
Countdown	Claudelands	$50	$47	5%	$ 2.68	3%	$12,500	$11,800
New World	Glenview	$27	$26	5%	$ 1.22	1%	$17,900	$17,100
New World	Hillcrest	$46	$42	9%	$ 4.04	4%	$30,700	$28,000
New World	Rototuna	$50	$40	19%	$ 9.45	10%	$12,400	$10,000
New World	Te Rapa	$49	$34	30%	$ 14.62	15%	$11,200	$7,800
Pak 'N Save	Clarence Street	$93	$88	6%	$ 5.42	6%	$19,900	$18,700
Pak 'N Save	Mill Street	$136	$120	12%	$ 16.43	17%	$22,800	$20,000
Pak 'N Save	Te Rapa		$97					$15,300
TOTAL		**$713**	**$725**					

72. The key findings from the modelled results are:

a. The largest percentage impacts are projected to occur on the two existing Te Rapa supermarkets – Countdown (-29% reduction in sales) and New

World (-30%). This results from the large overlaps within the catchment areas with the proposed store catchment.

b. The next largest percentage impacts are projected to occur on the surrounding supermarkets that the surrounding residential communities. These range from 14% to 19% and include New World Rototuna (-19%), Countdown Nawton (-15%), Countdown Chartwell (-14%) and Countdown Rototuna (-14%).

c. The largest contribution (17% of sales at the proposed store; $16.43m) to sales at the proposed store is projected to occur from a redirection of sales from the existing Mill Street Pak 'N Save store. This equates to a 12% reduction of sales at the existing Mill Street store.

73. I believe it is important to consider the effect of these impacts on floorspace productivity and total sales of each store, as these are important metrics that relate to store viability. These stores all have different base sales and productivities, meaning the effect may be more sustainable in some stores than others.

74. I consider these results suggest that the new store may impact the viability of Nawton Countdown. A 15% reduction in sales (-$2.91 million) would decrease floorspace productivity to $5,700 per m2 and total sales to around $16 million. The Figure below shows these sales values are substantially below all other Hamilton City Countdown supermarkets (as well as Hamilton City main supermarkets overall). A floorspace productivity of $5,700/m2 is also considerably lower than other supermarkets within Hamilton City, including those within smaller suburban centres (e.g. Dinsdale Countdown, Hillcrest New World, Glenview New World).

Figure 1: Modelled Sales Estimates of Hamilton City Countdown Supermarkets with the Proposed New Store, 2018
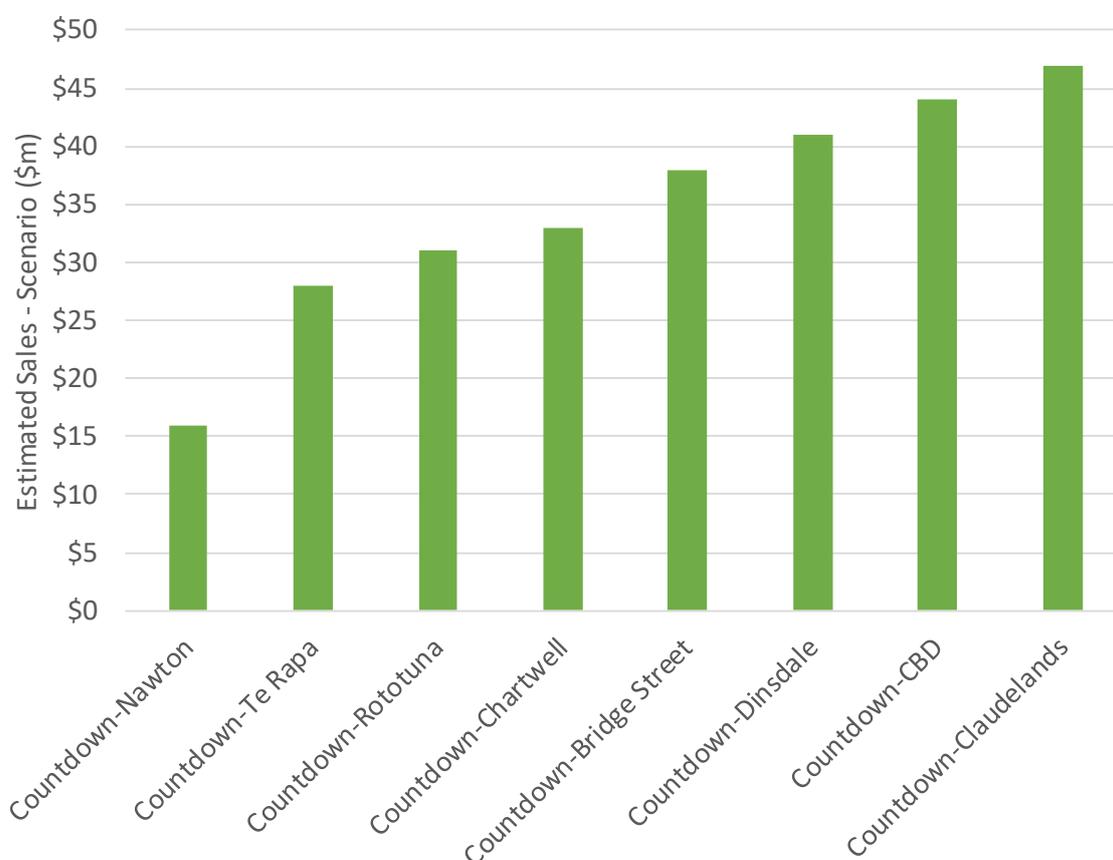
75. The results also show that Countdown Te Rapa would experience a decrease in floorspace productivity to a level similar to the current floorspace productivity of Nawtown Countdown.

76. I consider that the modelled results on other supermarkets, including the large net contribution from the Mill Street Pak 'N Save are of less concern. This is because the modelling indicates these supermarkets would still retain reasonable levels of floorspace productivity.

77. Changes in sales through time were also modelled under each scenario. Sales are a function of demand growth within the supermarkets catchments, which is driven by a combination of growth in the number of households, tourists and businesses, as well as real increases in expenditure from each of these drivers of demand. The modelled results estimate the time period over which sales at each supermarket are likely to take to return to existing levels with the addition of the proposed store. The key findings are:

    a. Sales at the Te Rapa supermarkets are projected to take between 10 to 15 years to return to current levels.

b. Sales at other supermarkets with the next largest percentage impacts are projected to take between 5 and ten years to return to current levels.

c. Sales at Nawton are likely to take 8 years to recover to existing levels. They are projected to reach current (2018) sales levels by 2026. However, this does not take into account any effect from any potential future supermarket that may establish within the future Rotokauri suburban centre that may serve a share of this demand growth.

78. The modelled outputs of sales through time at each supermarket, with and without the proposed store, are included in Appendix 1.

Scenario 2 – Addition of Proposed Store and Closure of Nawton Countdown

79. While the results suggest that Nawton Countdown may become unviable as a supermarket when considered individually, it is important to consider Nawton within the wider network of Hamilton supermarkets, including within their own-brand network. Supermarket operators typically make corporate decisions taking into account the store network as well as each supermarket individually. There is the potential for strategic decisions to retain an under-performing supermarket in order to retain market share across the store network overall.

80. The existing configuration of supermarkets suggests this may be the case for Nawton within Hamilton's western suburban edge. It is the only supermarket located within its catchment area, with limited potential sites for further supermarkets to establish within this geographic area to serve the local catchment. As such, a key question is how Nawton Countdown's sales are likely to be redistributed across the remaining supermarkets if the store were to close as a result of becoming less viable.

81. Further modelling was consequently undertaken to understand how the sales would be likely to be redistributed if Nawton were to close. One potential outcome is that the existing Countdown supermarkets (at Dinsdale and Te Rapa) are able to capture these sales and continue to serve this demand from within the Countdown brand network. Another outcome may be that a higher share of sales are redistributed across other supermarket brands, resulting in a loss of Countdown's market share in this area.

82. The modelled results are shown in Table 4. The Table shows how the existing sales at each supermarket under scenario 1 (existing supply structure with proposed store) (column 1) are likely to be redistributed across the supermarkets

with the closure of Nawton Countdown (column 2), with the net difference in sales between the scenarios at each supermarket shown in column 3. The final column (column 4) shows the share of Nawton Countdown's sales captured by each other supermarket. Percentages in this column can be added together across supermarkets to identify the percentage capture by each supermarket brand overall.

Table 4: Modelled Retail Distributional Effects of Closing Nawton Countdown, 2018

| SUPERMARKET | SUBURB | ESTIMATED SALES ($m) | | Net Difference in Sales | % Share of Redistributed Sales |
		SCENARIO - New Store	SCENARIO - New Store and Nawton Closure		
Countdown	Rototuna	$31	$31	$ 0.09	1%
Countdown	Te Rapa	$28	$29	$ 0.98	6%
Countdown	Chartwell	$33	$33	$ 0.08	0%
Countdown	Nawton	$16	$0	-$ 16.29	
Countdown	Dinsdale	$41	$44	$ 2.94	18%
Countdown	CBD	$44	$44	$ 0.32	2%
Countdown	Bridge Street	$38	$38	$ 0.07	0%
Countdown	Claudelands	$47	$47	$ 0.11	1%
New World	Glenview	$26	$26	$ 0.07	0%
New World	Hillcrest	$42	$42	$ 0.19	1%
New World	Rototuna	$40	$40	$ 0.11	1%
New World	Te Rapa	$34	$35	$ 0.36	2%
Pak 'N Save	Clarence Street	$88	$89	$ 0.95	6%
Pak 'N Save	Mill Street	$120	$127	$ 6.80	41%
Pak 'N Save	Te Rapa	$97	$101	$ 3.60	22%
TOTAL		**$725**	**$725**		

83. The modelled results in the above Table show that around three-quarters of Nawton Countdown's sales would be captured as market share by other supermarket brands. Nearly all of these would be captured by Pak 'N Save, with 41% of the sales redirected to Pak 'N Save Mill Street, and 22% to Pak 'N Save Te Rapa. Dinsdale Countdown would capture the next largest share of sales at 18%. Overall, the modelling suggests that the closure of Nawton Countdown is likely to result in a loss of around $12 million sales across the Countdown brand, with only $4.6 million of the $16 million sales being captured by the remaining Countdown supermarkets.

84. These results suggest that the closure of Countdown Nawton would see Countdown's total sales in Hamilton fall by 4.3%. Given the modelling results, I consider that it is more likely that a supermarket will remain open within Nawton centre. I consider the potential loss of share suggests that it is likely to be more strategic for Countdown to retain the Nawton store, but operate at a smaller scale, than to lose the market share to competitor stores. I also consider, as an alternative, that the closure of Nawton Countdown is likely to open up a market opportunity for a smaller supermarket to establish at this location and operate at a smaller capacity.

Comparison to Centres Assessment Report (CAR) Economic Modelling

85. Overall, my modelling and the original CAR modelling show broadly similar results in relation to the patterns of where the sales are drawn from (i.e. the "% Sales sourced from" column). Approximately 25% to 27% of sales are drawn from the existing Te Rapa supermarkets, a further 15% to 18% from the Rototuna supermarkets, and 3% from Nawton. A lower share (22%) is redirected from the existing Pak 'N Save stores under my modelling than the CAR modelling (28%).

86. The modelling results are also broadly similar in relation to the percentage impacts on the other existing Te Rapa supermarkets.

87. However, my modelling shows considerably larger sales and percentage impacts on other supermarkets of other centres within the proposed stores catchment area. These are predominantly a function of differences in the base sales estimates of existing stores, as well as the assumed sales values of the proposed store.

88. A key difference is the impact on Nawton Countdown. The CAR modelling assumes a base sales value of $30 million at Nawton Countdown. With $60 million at the proposed store, 3% equates to around $2 million sales drawn from Nawton Countdown. This results in a sales impact of 7% due to the assumed base of $30 million sales. The resulting floorspace productivity of $9,800/m2 would cause less concern for the viability of the supermarket and place it within a comparable range to other supermarkets floorspace productivity. In comparison, my modelling found a 15% impact on Nawton, with a resulting floorspace productivity of $5,700/m2.

89. I consider that the higher base sales value of Nawton, assumed in the CAR, is not supported by the empirical and modelled data for the Hamilton City

supermarket market. I also consider, as outlined in Section 4, that the assumed $60million annual sales value of the proposed store is unlikely to occur because it is inconsistent with the information available on the Hamilton City supermarket market.

8   TRAVEL EFFICIENCY AND HOUSEHOLD ENABLEMENT

90.   The spatial distribution of retail has a major influence on the enablement and efficiency of households and the urban sustainability of communities. People travel to meet their needs across the retail urban spatial structure, with the location of activity therefore having a direct effect on the travel efficiency of households. Households seek to maximise their travel efficiency across the network of retail supply and thus adjust their patterns of access to the retail offering within the network to balance the cost of access with the benefits obtained by accessing different levels of retail supply.

91.   Changes to the spatial supply structure of retail generate corresponding shifts to the travel and access patterns of households as they meet their needs across the new spatial structure. This occurs through both the direct changes to the supply through the addition of a new store, as well as the consequent changes to the supply structure from the flow-on effects to other retail supply. This includes the closure, relocation or opening of additional stores in response to the initial changes in retail supply.

92.   There are clear patterns in the household access to retail centres observed through the spatial data on spending flows between households and retail areas. These are well established key urban economic concepts and strongly reflect the economic processes in the spatial functioning of the retail sector. These patterns arise as a function of retail supply patterns, spatial patterns of demand, and the efficiency sought by households as they meet their needs across these spatial structures. Broadly, the core aspects are:

   a. Distance decay where the influence of each retail area decreases with distance.

   b. The relationships between retail size, market share and distance decay where larger amounts of retail supply have higher market shares in their surrounding catchments, and have slower rates of distance decay.

c. The relationship between retail size and demand where the scale of retail supply corresponds to the level of demand within the catchment it serves. Larger quantities of retail typically serve larger catchments, drawing sales from consumers across extensive geographic areas.

d. The inter-relationships between areas of retail supply. The quantity of retail supplied and its performance (sales) is affected by other retail supply within the surrounding spatial structure of retail (e.g. relationships between retail centres), as well as the agglomeration of retail within its own retail area.

93. The above components form the core underpinnings of the well-developed and long-standing retail gravity model approach. As such, the fundamental spatial structures that drive the gravity modelling approach enable the travel efficiency to be estimated for the different retail supply structures that emerge. They enable the distance required to access the new retail spatial supply structure to be estimated, which is a strong indicator of travel efficiency.

94. The social amenity of households and communities gained through their interactions within the urban environment are also influenced by travel efficiency and accessibility. Households seek to maximise the efficiency of their travel patterns as they meet their retail needs across the retail spatial structure. They are simultaneously obtaining different levels of social amenity from this spatial structure due to the important geographic linkages between retail and other activity that contributes to social amenity.

95. Retail is a major driver of urban form and how the city expands. It influences other patterns of land use, particularly those that contribute to the vitality and viability of centres, which play an important social amenity role for the communities they serve. Retail often sustains the wider functions of the centre (e.g. social infrastructure, civic functions, etc), which are significant drivers of sense of place and the social interactions that occur within centres.

96. The importance of centres for the communities they serve are important principles for the centres-based strategic direction of the Hamilton City District Plan. Moreover, the plan recognises differences in the roles of different centre types within the Hamilton urban centres hierarchy. It identifies the importance of local (e.g. suburban) centres in providing social amenity to their surrounding suburban catchments, together with the sustainability in local travel access patterns.

97.   Household travel patterns that access retail outside of the centres network thus reduce the social amenity received by households. This occurs as households do not incur, during the trip, the social amenity provided within centres. A redistribution of retail activity away from the centres also reduces the viability and vitality of the centre, reducing its relative role and therefore the viability of providing social amenity to the community.

98.   Changes in social amenity for households can also occur through a redistribution of activity (and consequent travel patterns) across the centres hierarchy. Increased concentrations of activity into higher order centres may also result in changes to household travel patterns away from smaller more local centres. This is more likely to occur when the locally-oriented, daily needs activity[13] of smaller centres is redistributed as larger functions to the higher order centres.

9   CHANGES IN HAMILTON CITY HOUSEHOLD TRAVEL EFFICIENCY

99.   The effect on households travel efficiency as a result of changes to the spatial supply structure of supermarkets in Hamilton City was estimated as a product of the gravity modelling of retail distributional effects. The travel efficiency effects from a change in retail supply are likely to vary by location across Hamilton, with greater effects felt in some communities than others.

100. Information on the spending and transaction numbers within the gravity modelling were converted into numbers of trips. The modelling of changes to spatial spending flows therefore indicated changes to the spatial access patterns of households to retail where trips were correspondingly redistributed across different destinations. This provided a measure of changes to the total distance across which supermarkets were accessed by households, which gave an indication of changes to the travel efficiency under each of the supply scenarios. The technical approach to these calculations is described in further detail within the technical report.

101. Analysis of the spending data flows within Hamilton City suggests that Hamilton households currently make an average of 2.5 trips per household

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[13] This refers predominantly to the consumable, smaller goods and services functions that typically serve more local catchments. It does not refer to the agglomeration of comparison goods retail into larger centres which typically occurs through time as urban economies expand. Agglomeration of comparison goods retail into larger centres enables comparison shopping, and is less likely to adversely affect social amenity than the more localised activities of smaller centres.

each week to the supermarket. The average trip distance (from home to the supermarket and return) is 2.37 kilometres each way (4.5 kilometres return). This equates to an average weekly distance of 11.2 kilometres travelled, or 585 kilometres per year. In aggregate, it is estimated that Hamilton City households travel a total of 35.96 million kilometres to access the main supermarkets within Hamilton City each year[14]. These are summarised in Table 5 below.

Table 5: Estimated Changes to Travel Efficiency of Hamilton City Households by Retail Supply Structure Scenario

|	Base scenario - existing retail structure	Scenario 1 - proposed store	Scenario 2 - proposed store and no Nawton supermarket
Hamilton City Households (2018)	61,500	61,500	61,500
Average supermarket trips (per household)	2.47	2.47	2.47
Average trip distance (km per household)	4.55	4.74	4.91
Weekly supermarket travel (km per household)	11.21	11.69	12.12
Annual supermarket travel (km per household)	585	610	632
Total annual supermarket travel (all households) (total km)	35,956,000	37,489,000	38,858,000
Total km net difference to base scenario		1,533,000	2,902,000
Total km % difference to base scenario		4.3%	8.1%
Total km net difference to scenario 1			1,369,000
Total km % difference to scenario 1			3.7%

102.   The modelling suggests that with the addition of the proposed store (scenario 1), the spatial access patterns of households to supermarkets would shift such that:

   a. The average trip distance would increase by 0.19 kilometres to become 4.74 kilometres.

   b. This would result in an average of an additional 25 kilometres travelled per year for each household (relative to the existing retail structure).

   c. In total, across all households, this would result in an additional 1.533 million kilometres travelled in a year. This amounts to a 4.3% increase in the estimated travel undertaken by households in meeting their supermarket retail needs.

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[14] This includes only the trips made by households. It was estimated from the retail demand inputs to the gravity model that households account for 80% of the supermarket demand within Hamilton City.

103. The indicated change to travel efficiency under Scenario 2 (the addition of the proposed store together with the closure of Nawton Countdown) are also shown in Table 5. The findings suggest there would be an estimated further 3.7% increase in estimated travel. The average distance across which supermarkets are accessed would be likely to increase to 4.91 kilometres, resulting in an overall increase of 1.369 million kilometres annually across all Hamilton City households. In total, this would result in an increase of 8.1% from the existing situation – 2.902 million kilometres annually across all Hamilton City households.

104. The effects on household travel efficiency are not likely to be experienced homogenously across Hamilton City. Their relative effect on each area is dependent upon how the household travel patterns in each area are impacted by the changes in the retail supply-side structure. These are a function of the main components driving the gravity model process – the supply-side changes, the neighbourhood location relative to the retail supply and the spatial patterns of spending flows.

105. The map below shows the degree to which household supermarket travel patterns are likely to be changed by the addition of the proposed store to the existing supermarket network. It is expressed as the percentage change in overall supermarket travel distance within each neighbourhood from the changes in spatial spending flows in response to the new store. It shows that:

    a. Neighbourhoods within the areas immediately surrounding the proposed store are likely to experience a positive effect on travel efficiency (i.e. a decrease in total distance). This is expected with new supply being added to their local area. The new supply captures a higher share of spend locally, thus reducing the overall travel to supermarkets beyond the local area.

    b. The rest of Hamilton City is projected to have decreases in supermarket travel efficiency. Households within the catchments of the surrounding centres of Nawton, Chartwell and Rototuna are likely to experience the greatest relative impact. Overall, the distances travelled by households within the areas immediately surrounding these centres (i.e. within 2 kilometres road network distance) to supermarkets are projected to increase by between 8% to 11%.

c. These effects correspond spatially with the patterns of sales redistribution impacts likely to be experienced by these supermarkets within the local centres serving these surrounding local areas. The supermarkets within these areas tend to have relatively localised catchments, drawing reasonably substantial shares of their sales from households within the immediately surrounding areas. Any redirection of sales to the proposed larger store, located further away, will result in significantly longer travel distances for these households that previously made short trips to their local supermarket.

Figure 2: Modelled Changes to Hamilton City Household Supermarket Travel Efficiency with the Addition of the Proposed Store
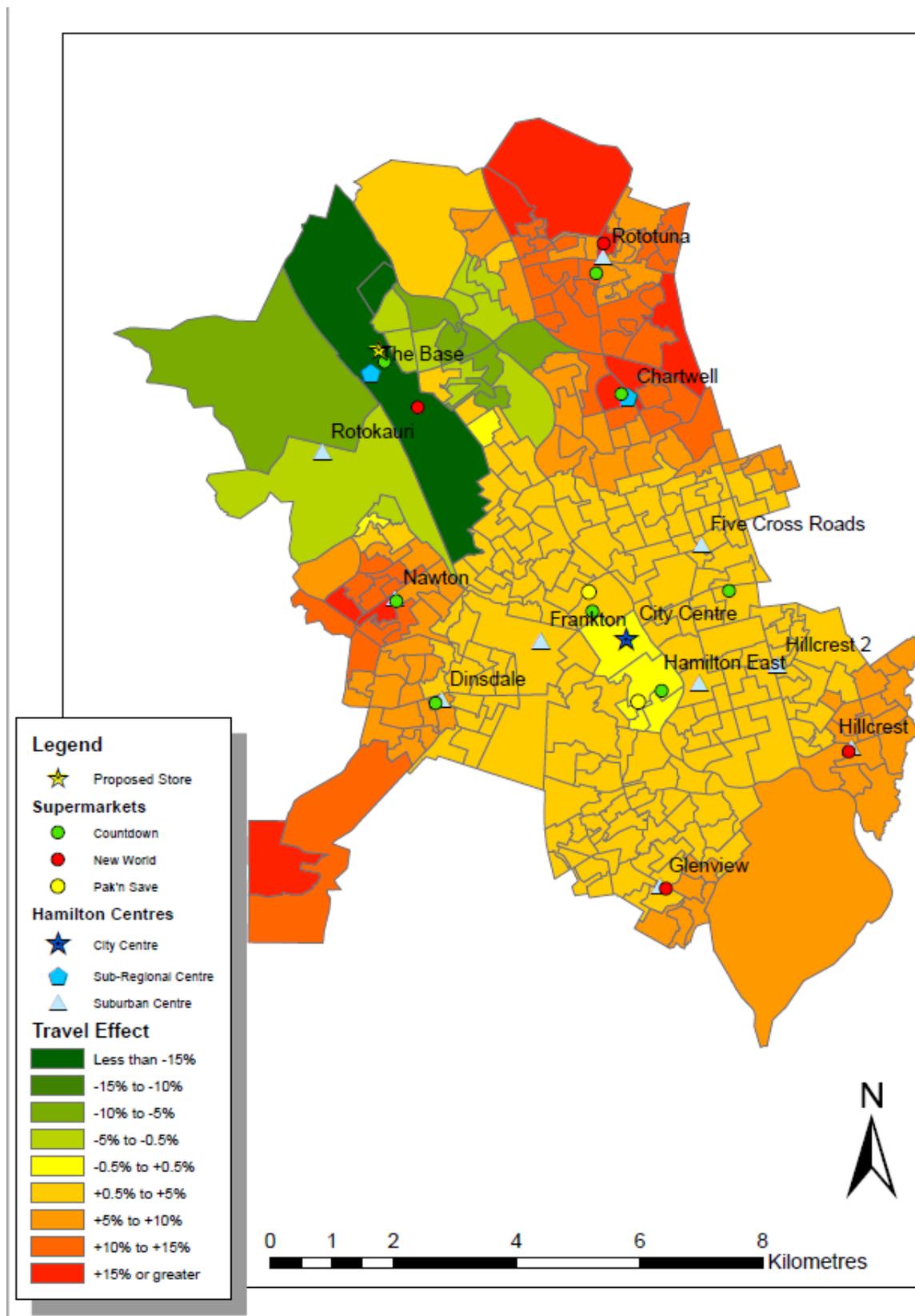
106. The modelling results showed that under scenario 2 (the closure of Nawton Countdown), the travel efficiency effects are strongly concentrated into the

Nawton catchment. Overall, the distance travelled by households within Nawton's main catchment area (i.e. within 2 kilometres of Nawton) to supermarkets is likely to increase by an average of 33%. The effect is stronger, at an increase of 82%, within 1 kilometre of Nawton. Households located immediately around Dinsdale are likely to experience a small increase in travel efficiency as a share of the Dinsdale households currently shopping at Nawton are likely to be redirected to Dinsdale supermarket with the associated reduction in travel distance.

10   CONCLUSIONS

107. My technical assessment found that the CAR did not contain sufficient detail to establish the likelihood of the retail distributional modelling effects on other centres that were stated within the CAR. I consider that a number of the key assumptions on sales levels and floorspace productivity of the proposed store, total market growth, and future sustainable floorspace were not supported by the information available on the Hamilton supermarket market. I consider that changes to the allocation of spending flows to different supermarkets, together with differences in floorspace productivity, may to yield substantially different results in relation to the effects on other centres.

108. The retail distributional modelling I subsequently undertook shows that the proposed store is likely to have a sizeable impact on a number of the existing stores within Hamilton City's supermarket network. The largest relative effects are likely to occur on the other Te Rapa supermarkets (Countdown and New World), and the largest share of sales at the new store are likely to be drawn away from the Mill Street Pak 'N Save. Significant impacts are also suggested to occur for the existing supermarkets at Rototuna, Nawton and Chartwell – the surrounding suburban and sub-regional centres.

109. The modelled effects on Nawton are of greatest concern as they indicate that the proposed store may adversely affect the viability of this supermarket, with sales taking at least 8 years to return to their current levels through growth in demand within the catchment. These findings are notable because the supermarket plays an important role within Nawton centre.

110. If the supermarket at Nawton becomes unviable, then it is likely to have a flow-on effect to other retail because it is a major attractor of customers to the centre. If the supermarket closed, then it is likely to begin to undermine the

centre. It would also likely result in the closure of other retail within the centre where a substantial share of their trade is likely to be linked to customer supermarket trips to Nawton[15]. If this occurred, then I consider that it is likely that the retail mix would change in Nawton, with the centre performing a lower relative role within its catchment. This would adversely affect the enablement of the surrounding community served by the centre.

111.   However, I consider that a scenario with no supermarket operating within Nawton is unlikely to be an outcome delivered by the market. Further modelling indicates that a closure of Nawton Countdown would result in a loss of market share of Countdown in Hamilton as sales are redistributed to other brands. Therefore, I consider the continued operation of Countdown, albeit at a smaller scale, to be a more likely outcome. The significant size of the Nawton catchment (9% of Hamilton's residential population) means that an alternative scenario may be the establishment of a competitor store at a smaller scale; or the establishment of a smaller supermarket outside of the main brands (e.g. Four Square or Super Value).

112.   On this basis, I consider that the results suggest that Nawton is likely to continue to have a supermarket operating within the suburban centre, albeit at a reduced scale. I therefore consider, for the purposes of Rule 9.5.4, that the centre is likely to be able to continue to function as a suburban centre, although potentially at a smaller scale.

113.   The modelling of travel efficiency effects in response to the addition of the proposed store suggest that the distance across which Hamilton households meet their supermarket needs would increase by 4.3%. This equates to a net increase of 1.533 million kilometres across all Hamilton households over one year. The greatest negative impacts on travel efficiency are likely to be experienced by the communities in the catchments served by the surrounding sub-regional and suburban centres of Nawton, Rototuna and Chartwell.

114.   These findings on travel efficiency are notable within the context of the planning objectives and policies for suburban centres. Suburban centres play an important role in the urban sustainability of Hamilton City. They are

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[15] The potential impacts of a loss of trade from cross-shopping on other retailers within the centre were assessed in my earlier response to the further information provided by the applicant. These results have been re-tested using the updated gravity modelling impacts on supermarkets, which confirmed our earlier findings that a closure of the supermarket may result in the closure of other retailers, while this is unlikely to occur if the supermarket remained open.

intended to be important focal points for the surrounding community and "*provide an opportunity to reduce the need for travel, by providing for mixed uses, a diverse range of activities, services and trading formats (Policy 6.2.2b, ODP: p6-6)*" and "*act as focal points for local community development (Policy 6.2.2c, ODP: p6-6)*". The travel efficiency modelling results show effects that are not aligned with these policies as they result in a redistribution of travel patterns away from local centres to a further away, out-of-centre location.

115. In combination, the gravity modelling and indicative travel efficiency modelling results show that the proposed store is unlikely to be consistent with the centres-based strategy of the Plan. It is not a pattern of development that supports the growth and development of centres or "*enhance[s] their function, vitality, viability and amenity as focal points for a diverse range of activities needed by the community (Policy 6.1c, ODP: p6-1)*".

116. The travel efficiency results suggest that the proposed store will result in a decrease to community enablement and efficiency, particularly for the communities served by the surrounding suburban and sub-regional centres of Nawton, Rototuna and Chartwell. This occurs through the redirection of access patterns away from centres (and the consequent loss of social amenity received), the overall increase in travel, and the reduction in the relative role of the centre.

117. However, the results do not provide a sufficiently strong basis to conclude that the proposed store will necessarily undermine the centres hierarchy. This is partly due to the absence of a set criteria within the Plan relating to the thresholds of undermining a centre. The modelling results indicate that a supermarket, albeit at a smaller scale, is likely to remain within Nawton suburban centre. Therefore, the centre is likely to still continue to function as a suburban centre, albeit at a lesser scale. I consider that the likely outcome of activity within Nawton centre is within the definition of a suburban centre within the Plan.

118. While these effects are undermining to the centres hierarchy, the modelling has confirmed the figures presented within the CAR that the *scale* of the effects of the proposal will not by itself undermine the hierarchy. In part, this conclusion is necessitated by the Plan due to the absence of a set criteria within the Plan relating to the thresholds of undermining a centre. The modelling results suggest that a supermarket is likely to continue to operate

within Nawton, and I therefore consider the centre is still able to function as a suburban centre for the surrounding catchment, albeit at a lesser scale.

119. An overall economic assessment of the effects of the proposal, taking into account the *direction* of the effects in relation to the strategic objectives of the Plan would, in my opinion, normally form an important part of any retail economic assessment. I consider that the *direction* of the effect needs to be considered together with the *scale* of the effect. I consider that it is appropriate to evaluate the *direction* of the effect and whether the resulting development pattern contributes to the objectives of the Plan. This is because urban form develops incrementally and cumulatively through time through the aggregation of many land use decisions. It is very difficult for an individual store to have sufficiently large effects to undermine an existing centre by itself, yet in combination with other land use decisions, the pattern of development becomes significant through time.

120. However, the scope of the work commissioned has been specifically limited to undertaking a calculation of the *scale* of the effects to satisfy the information requirements of Rule 9.5.4(ii) to inform the overall planning assessment of the proposal. I understand that this quantification forms a subset of the information taken into account within the planning report, which will include an assessment of the consistency of the proposal in relation to the objectives and policies of the Plan. Therefore, for the purposes of Rule 9.5.4 and within the commissioned scope of the assessment, based on assessing only the *scale* of the impacts, I cannot conclude that the proposed supermarket would undermine the business centres hierarchy.

S M Fairgray

29 April 2019

APPENDIX 1

Table 6: Projected Supermarket Sales – Existing Supply Structure – 2018-2043

| SUPERMARKET | SUBURB | SALES - CALIBRATION (2018 $ million) | | | | | | % CHANGE |
		2018	2023	2028	2033	2038	2043	2018-2043
Countdown	Rototuna	$36	$42	$44	$47	$50	$53	47%
Countdown	Te Rapa	$39	$48	$56	$65	$76	$87	121%
Countdown	Chartwell	$38	$43	$46	$49	$53	$56	48%
Countdown	Nawton	$19	$21	$24	$27	$29	$33	69%
Countdown	Dinsdale	$45	$49	$54	$58	$63	$67	51%
Countdown	CBD	$46	$50	$55	$59	$64	$69	51%
Countdown	Bridge Street	$39	$43	$47	$50	$54	$58	49%
Countdown	Claudelands	$50	$55	$59	$64	$68	$73	47%
New World	Glenview	$27	$32	$42	$53	$64	$77	188%
New World	Hillcrest	$46	$51	$56	$61	$67	$73	58%
New World	Rototuna	$50	$60	$64	$69	$73	$78	57%
New World	Te Rapa	$49	$55	$65	$76	$88	$101	107%
Pak 'N Save	Clarence Street	$93	$104	$116	$128	$141	$156	66%
Pak 'N Save	Mill Street	$136	$152	$168	$186	$204	$224	64%
TOTAL		**$713**	**$805**	**$897**	**$994**	**$1,093**	**$1,206**	**69%**

Table 7: Projected Supermarket Sales – Addition of Proposed Store – 2018-2043

| SUPERMARKET | SUBURB | SALES - SCENARIO 1 (2018 $ million) | | | | | | % CHANGE |
		2018	2023	2028	2033	2038	2043	2018-2043
Countdown	Rototuna	$31	$36	$38	$41	$43	$45	46%
Countdown	Te Rapa	$28	$33	$37	$43	$48	$54	95%
Countdown	Chartwell	$33	$36	$39	$42	$45	$48	47%
Countdown	Nawton	$16	$18	$20	$22	$24	$27	65%
Countdown	Dinsdale	$41	$45	$49	$53	$57	$61	50%
Countdown	CBD	$44	$48	$52	$57	$61	$66	51%
Countdown	Bridge Street	$38	$41	$45	$48	$52	$56	49%
Countdown	Claudelands	$47	$52	$56	$60	$65	$69	47%
New World	Glenview	$26	$31	$40	$51	$62	$74	190%
New World	Hillcrest	$42	$47	$51	$56	$60	$66	56%
New World	Rototuna	$40	$47	$51	$55	$58	$62	54%
New World	Te Rapa	$34	$38	$44	$50	$56	$63	85%
Pak 'N Save	Clarence Street	$88	$98	$109	$121	$133	$147	67%
Pak 'N Save	Mill Street	$120	$133	$146	$161	$175	$191	60%
Pak 'N Save	Te Rapa	$97	$115	$133	$153	$174	$197	69%
TOTAL		**$725**	**$819**	**$913**	**$1,011**	**$1,113**	**$1,227**	**69%**