Economic Modelling of Retail Distributional Effects

Proposed Te Rapa Pak ‘N Save

Prepared for

Hamilton City Council

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1 Introduction

1.1 Overview

A resource consent application has been submitted by Foodstuffs North Island Ltd to Hamilton City Council (HCC) to locate a Pak ’N Save supermarket and associated fuel facilities in the Industrial Zone on Te Rapa Road opposite The Base Sub-Regional Centre. The planned supermarket would have 6,358m² of gross floor area (GFA) and would occupy a 2ha site.

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, increasing the overall size of the retail hub within the northern part of Hamilton City.

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 within Hamilton’s business centres hierarchy.

Understanding the likely effects of the proposal on the role and function of other centres within Hamilton’s business centres hierarchy is a key issue to understand in assessing the consent application. Centres play an important role for the communities they serve in enabling households efficient access to goods and services as well as the social amenity they provide.

In accordance with the Hamilton City Operative District Plan (ODP), the applicant has submitted a Centres Assessment Report (CAR)\(^1\) to present the economic effects of the proposal. Limited further information on the potential economic effects has also been submitted in response to a Section 92 Further Information Request. M.E have previously provided technical input to HCC of both the CAR and the Section 92 further information.

1.2 Scope of Further Retail Modelling Assessment

M.E have been commissioned by HCC to undertake further analysis to assist Council in understanding the likely economic effects of the proposal. Specifically, M.E have been commissioned to conduct economic modelling to calculate the likely retail distributional effects of the proposal on Hamilton City’s business centres hierarchy. An overall assessment of the potential effects on household travel efficiency as a result of any changes to the distribution of retail across Hamilton’s urban spatial economic structure is also a key output of the modelling process.

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The scope of the M.E assessment, commissioned by HCC, is specifically to calculate the likely scale of effect across the centres within Hamilton City’s business hierarchy. This is 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).

The ODP does not contain a set of criteria relating to the thresholds of “undermining” a centre. The assessment of the modelling outputs therefore consider how the centres within the business hierarchy are likely to function if the proposal were to occur and how this aligns with the descriptions of the business centres hierarchy set out in the ODP. The commissioned analysis is as to whether the centres would continue to function within their defined role within the hierarchy.

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 normally form an important part of any retail economic assessment. M.E consider that the direction of the effect needs to be considered together with the scale of the effect. M.E 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.

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. We 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.

### 1.3 Structure

The report is structured as follows. Section 2 provides an overview of the resource consent key details and the technical assessment process. It outlines the findings from the initial CAR in relation to the effects on other centres and provides M.E’s findings on our technical assessment of the relevant sections of the CAR. Section 3 provides an overview of the key aspects of the Hamilton City urban structure and existing supermarket market that are important to understand the effects of the proposal in relation to the retail distributional modelling. Section 4 contains M.E’s retail economic modelling of the retail distributional effects on other centres. Section 5 provides our estimation of the travel efficiency effects that flow as an output from the retail distributional effects. Our conclusions on the retail distributional modelling results are contained in Section 6.
2 Background Context and Key Findings

2.1 Resource Consent Key Details

A resource consent application has been submitted by Foodstuffs North Island Ltd to Hamilton City Council (HCC) 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.

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, increasing the overall size of the retail hub within the northern part of Hamilton City.

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 within 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.

2.2 Technical Assessment Process

M.E were commissioned by HCC to provide technical input on the CAR for the application, which has been prepared by Property Economics Ltd (PEL). 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.

M.E, as Council’s experts on centres assessments, met with the applicant (Foodstuffs NI Ltd), their planners and their economic consultant (PEL) on 11 September 2017 prior to the PEL economic analysis being undertaken. The intent of the meeting was to clarify the scope of the CAR and to identify the relevant issues to be addressed within the economic assessment. A list of the agreed matters to be included within the CAR is contained within Appendix 1.

In July 2018 the applicant submitted a Centres Assessment Report (CAR)\(^3\), as part of the land use application, to present the economic effects of the proposal. M.E provided technical input (refer to Appendix 2) on the CAR submitted to HCC in August 2018. It 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.


\(^3\) Property Economics Ltd, 2018 PAK’N SAVE TE RAPA RETAIL ECONOMIC IMPACT ASSESSMENT, prepared for Foodstuffs North Island, June 2018.
An initial response to the FIR was provided by the applicants’ economic advisor on 31 August 2018. On 20 September 2018, M.E met with the applicants’ planner and economic advisor to have a technical discussion of the points raised in the FIR and the initial response.

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:

- “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.”
- “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.”

On Monday 29 October 2018 M.E received, from Hamilton City Council, a further response from the applicant’s economic advisor on the points contained within the FIR, which had yet to be satisfied.

On 1 November 2018 M.E provided a technical assessment of the additional economic information received by the applicant. M.E 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.

### 2.3 Applicants Retail Modelling and Analysis – Key Assumptions and Findings

Analysis was undertaken in the initial CAR to quantify the retail distributional effects across the existing centres hierarchy as a result of sales diversion to the proposed store. This sub-section outlines the key assumptions used within the CAR retail modelling analysis and the key findings of the analysis in relation to the calculated effects on centres. This section focuses only on the retail distributional modelling and relevant assumptions contained within the CAR. A full summary of the CAR main conclusions and the M.E assessment of the CAR are contained within the M.E technical assessment (M.E 9 August 2018 report).

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6 M.E Ltd, 2018 Re: Assessment of Section 92 Response – Te Rapa Pak ‘N Save, memo to Hamilton City Council, 1 November 2018.
The initial CAR provided by the applicant has quantified 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.

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. 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.

At the total Hamilton City level, the projected demand growth in the CAR implies an increase of 30,300m² GFA of sustainable supermarket floorspace over the period 2018 to 2038. The sustainable supermarket floorspace in Hamilton City would increase by 41,300m² 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.

There are 14 existing main supermarkets identified within Hamilton City within the CAR across the Countdown, New World and Pak ‘N Save supermarket brands. Floorspace information is provided for the supermarkets that are located within the main catchment area of the proposed store. These are very similar to the estimates contained within M.E’s database for the selected supermarkets. Although not stated within the CAR, the total floorspace across these supermarkets within M.E’s database amounts to around 51,000m² GFA. If the floorspace across the remaining supermarkets within the CAR is also similar to that within the M.E database, then this implies an average floorspace productivity of around $14,000 sales per m² of floorspace (GFA).

The initial CAR provided by the applicant assumed that the proposed store, with a floorspace of 6,358 m² GFA, will have annual sales of $60 million. This equates to a floorspace productivity of around sales of $9,400 per m² of floorspace (GFA). The CAR has assumed that the proposed store will draw these sales from across an expansive geographic area with a similar catchment area to the existing node of retail at The Base.

In comparison, the CAR assumes that the other two (smaller) existing Hamilton City Pak ‘N Save supermarkets have a combined sales value of $205 million. When applied to the M.E floorspace estimates for these stores, this equates to an average floorspace productivity of around $19,200 sales per m².

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 Table 2-1.

Table 2-1: CAR Estimated Supermarket Sales With and Without the Proposed Store

<table>
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<th>CENTRE</th>
<th>Estimated Revenue ($m pa)</th>
<th>Estimated Sales Post Diversion ($m pa)</th>
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<tr>
<td>The Base</td>
<td>$50</td>
<td>$95</td>
</tr>
<tr>
<td>Rototuna</td>
<td>$95</td>
<td>$84</td>
</tr>
<tr>
<td>Nawton</td>
<td>$30</td>
<td>$28</td>
</tr>
<tr>
<td>CBD</td>
<td>$205</td>
<td>$188</td>
</tr>
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Source: Property Economics Ltd, 2018
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.

The CBD sales estimates are for the two existing Pak ‘N Save stores – Mill Street and Clarence Street. They do not include the sales at the two Countdown supermarkets located within the central city area.

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

- **The Base (existing supermarkets):**
  - -30% sales impact.
  - Net reduction of $15 million sales.
  - 25% of sales at new store.

- **Rototuna:**
  - -12% sales impact.
  - Net reduction of $11 million sales.
  - 18% of sales at new store.

- **Nawton:**
  - -7% sales impact.
  - Net reduction of $2 million sales.
  - 3% of sales at new store.

- **CBD:**
  - -8% sales impact.
  - Net reduction of $17 million sales.
  - 28% of sales at new store.

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 disable the communities they serve. Key aspects are that:

1. Brand competition between supermarkets has already occurred in Nawton through the Mill Street Pak’n Save, therefore the effect will be small. The modelled effect in the CAR is 7%.
2. The City Centre will have a sales impact of 7% for supermarket spend, which will be less than 4% for retail overall. The wider role of the City Centre makes this effect insignificant.
3. Effects at Rototuna centre (modelled at 12%) will not be sufficient to result in the closure of any existing supermarkets.

The largest effect will be on Countdown within Te Rapa. However, this is netted out by an overall increase in centre sales where the proposed supermarket will function together with the existing retail and therefore increase overall centre sales. The modelled effect on the existing Te Rapa supermarkets is 30%.
2.4 Summary of M.E Technical Assessment Key Findings

This sub-section contains the M.E assessment of the CAR assessment of effects on other centres. It includes M.E’s findings on the core assumptions that underpin the CAR assessment on centres, as well as our findings on the CAR centres assessment itself. While this sub-section only includes our assessment of these aspects, a full assessment of the CAR is contained within Appendix 2.

Overall, the M.E 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 from each centre to the proposed store.

Our 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.

M.E 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.

The following sub-sections contain extracts, from our technical assessment, of the key assumptions contained within the CAR.

Floorspace Growth

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 m² per annum. The CAR has used this to then calculate that 27,700m² of supermarket floorspace can currently be sustained by the core catchment area, and that this would increase to 42,700m² by 2038 – a net increase of 15,000m², of +54% (Table 1 in the CAR).

At the total Hamilton City level, the projected demand growth implies an increase of 30,300m² GFA of sustainable supermarket floorspace over the period 2018 to 2038. The sustainable supermarket floorspace in Hamilton City would increase by 41,300m² 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.

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.

To illustrate this increase in floorspace in terms of supermarkets “on the ground”, the CAR implies that demand growth within the Hamilton market could support another 7 Pak ‘N Save supermarkets (of the same scale 6,358m² as that proposed) over the next 20 years. This compares to the existing 14 supermarkets within Hamilton City.
Sales Productivity

The CAR sales productivity estimate is $8,760 per m² 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.

M.E consider that a rate of $8,760 per m² is significantly too low. Our experience in the supermarket sector suggests that floorspace productivity for urban supermarkets typically falls within a range of $11,000 to $18,000 per m², and higher productivities in higher value, busier locations. We 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 our information on total Hamilton supermarket floorspace and estimated supermarket spend, we estimate supermarket floorspace productivity to be around at least $11,000 to $13,000 per m² overall (where the figure will be greater if a net surplus of spending from outside of the city is included in the calculation).

It is unclear why a floorspace productivity of $8,760 per m² has been selected within the CAR analysis. It is not consistent with the calculations contained within the CAR itself, which suggests that total Hamilton City supermarket sales are currently around $713m annually⁷. The floorspace of the supermarkets of over 1,000m² GFA in Hamilton City (which concords with the map of supermarkets – Figure 1 of the CAR) is estimated at around 51,000m². On this basis, the CAR estimate of $713m of sales would represent floorspace productivity of around $14,000 per m². If the $8,760 per m² floorspace productivity figure is accurate, then that would imply that the Hamilton market would currently be able to sustain a further 31,000 m² 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.

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.

Future Sales Productivity

The CAR analysis assumes that there will be no change in floorspace productivity through time.

Our experience in the sector is that the 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. M.E 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.

Overall, at the Hamilton City level, if M.E’s calculations of supermarket spend (higher than PEL’s) are applied (though still adopting the CAR assumption that an additional 35% of spend is drawn from surrounding areas⁸), but allowing for floorspace productivity to increase through time at a rate of 0.5% pa, then there would be an estimated increase of 21,700m² of supermarket floorspace at the city level out to 2038.

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⁷ This is based on applying the formula in footnote 5 of the PEL report to the figures contained in Table 2 of the PEL report to identify the total spend at supermarkets across Hamilton.

⁸ We 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
This is around half of the estimated increase of 41,300m² which is implied by the CAR.

Supermarket Spending Diversion

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.

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. M.E consider that the floorspace productivity is likely to be higher, at around $15,700/m²\(^9\). Higher productivity would mean higher sales than estimated (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.

Higher sales of $100 million p.a. compares to our 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.

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

In similar vein, we 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 m² productivity level assumed by the CAR, the market would sustain an additional 42,000 m² 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 m², 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.

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 m² compared with some 51,000 m² currently). On this basis, the effects in terms of diverted trade and customer shopping travel would be in that order of

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\(^9\) We note that our 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.
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

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.

M.E 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. M.E 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.

M.E 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.

M.E 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.
3 Hamilton City Urban Structure and Supermarket Market

3.1 Population and Households

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 role within the surrounding districts as it is the closest main urban centre for much of the surrounding area.

Table 3-1 shows the estimated population and households across Hamilton City and the surrounding Waikato and Waipa districts. There are a further 75,000 people living in 27,000 households within the Waikato District. Approximately 38% of these are located in the areas immediately surrounding Hamilton City, and a further 35% (combined, nearly three-quarters) within the wider area of Hamilton City’s influence. There are a further 54,000 people living in 21,000 households in Waipa District, although Hamilton City has a smaller relative role within this district due to the presence of Te Awamutu and Cambridge urban settlements.

Table 3-1: Estimated Population and Households in Hamilton City, Waikato District and Waipa District, 2018

<table>
<thead>
<tr>
<th>TLA</th>
<th>2018 Estimated Population</th>
<th>2018 Estimated Households</th>
<th>SHARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamilton City</td>
<td>169,300</td>
<td>61,500</td>
<td>57% 56%</td>
</tr>
<tr>
<td>Waikato District</td>
<td>75,300</td>
<td>27,100</td>
<td>25% 25%</td>
</tr>
<tr>
<td>Waipa District</td>
<td>54,000</td>
<td>20,900</td>
<td>18% 19%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>298,600</td>
<td>109,500</td>
<td>100% 100%</td>
</tr>
</tbody>
</table>

3.2 Supermarket and Grocery Store Retail Demand

Retail activity within Hamilton City primarily serves households within Hamilton’s urban area as well as a significant share of demand from the surrounding area. The catchments of Hamilton’s larger centres extend considerable distances into the areas surrounding Hamilton. These areas, particularly the Waikato and Waipa districts, thus also represent important areas of demand for Hamilton City. As such, the Hamilton supermarket retail market has been analysed within the wider context of the surrounding districts.

In total, there is an estimated annual demand for $650 million spend at supermarket and grocery stores originating from within Hamilton City. This includes spending across the key drivers of demand including households (spending from home and the workplace), businesses and tourists. A further $254 million in demand originates from within Waikato District and $206 million from Waipa District.
Table 3-2 provides key information on the spatial structure of supermarket and grocery store demand across these areas. It identifies how the demand originating from within each market is distributed as sales across each area as well as the rest of New Zealand. The destination of sales within Hamilton City has been disaggregated into Hamilton main supermarkets\(^{10}\) vs. the rest of Hamilton City\(^{11}\). Consequently, Table 3-2 shows the share of sales within each location that originate from demand within the different markets (Hamilton City, Waikato District, Waipa District and the Rest of New Zealand), as well as how the demand within each origin market is distributed as sales across each destination market.

### Table 3-2: Spatial Structure of Supermarket Demand and Sales, 2018

<table>
<thead>
<tr>
<th>SALES DESTINATION</th>
<th>HAMILTON</th>
<th>WAIKATO</th>
<th>DEMAND ORIGIN</th>
<th>REST OF NZ</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESTIMATED DEMAND/SALES 2018 ($m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hamilton Supermarkets</td>
<td>$497</td>
<td>$98</td>
<td>$46</td>
<td>$73</td>
<td>$713</td>
</tr>
<tr>
<td>Rest of Hamilton City</td>
<td>$57</td>
<td>$5</td>
<td>$3</td>
<td>$11</td>
<td>$76</td>
</tr>
<tr>
<td>Waikato District</td>
<td>$8</td>
<td>$78</td>
<td>$3</td>
<td>$25</td>
<td>$115</td>
</tr>
<tr>
<td>Waipa District</td>
<td>$10</td>
<td>$16</td>
<td>$154</td>
<td>$46</td>
<td>$225</td>
</tr>
<tr>
<td>Rest of New Zealand</td>
<td>$77</td>
<td>$57</td>
<td>$1</td>
<td>$18,464</td>
<td>$18,599</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$650</strong></td>
<td><strong>$254</strong></td>
<td><strong>$206</strong></td>
<td><strong>$18,619</strong></td>
<td><strong>$19,728</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHARE OF ORIGIN DEMAND BY DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamilton Supermarkets</td>
</tr>
<tr>
<td>Rest of Hamilton City</td>
</tr>
<tr>
<td>Waikato District</td>
</tr>
<tr>
<td>Waipa District</td>
</tr>
<tr>
<td>Rest of New Zealand</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHARE OF DESTINATION SALES BY DEMAND ORIGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamilton Supermarkets</td>
</tr>
<tr>
<td>Rest of Hamilton City</td>
</tr>
<tr>
<td>Waikato District</td>
</tr>
<tr>
<td>Waipa District</td>
</tr>
<tr>
<td>Rest of New Zealand</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

Approximately 85% of the supermarket and grocery store demand originating from within Hamilton City is met within Hamilton City. Only small shares (3% combined) is met in the surrounding Waikato and Waipa districts. The remaining 12% is met at supermarkets in the rest of New Zealand. Hamilton City also attracts high shares of the demand from Waikato and Waipa districts. It attracts 41% of the demand from Waikato District, and 23% from Waipa District. Only 31% of the demand arising within Waikato District is met within the district. Conversely, three-quarters (75%) of the demand from Waipa District is met within the District. This is largely a function of the concentration (70%) of Waipa’s population located in and around the main urban settlements of Te Awamutu and Cambridge that contain main supermarkets.

\(^{10}\) These include the three large supermarket brands of Pak ‘N Save, Countdown and New World.

\(^{11}\) This covers merchants that attract the remainder of Hamilton City supermarket and grocery stores spend. These include typically smaller supermarkets (e.g. Four Square and Supervalu) that fall outside the three main brands, as well as other supermarket and grocery stores (including dairies).
Overall, 70% of the sales across Hamilton’s main supermarkets are to demand originating within Hamilton City. A further 20% occur from demand within the surrounding districts, and the remaining 10% from consumers in the rest of New Zealand. The shares of sales to consumers within the Waikato District are substantially higher for supermarkets located within the Northern parts of Hamilton City.

### 3.3 Supermarket Supply Within Hamilton City

Hamilton City contains 14 main supermarkets within the Countdown, New World and Pak ‘N Save brands. These main supermarkets attract approximately 90% of the 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 main supermarkets within Hamilton City have a combined gross floor area (GFA) of 51,000 m². With a combined total sales value, this equates to an average floorspace productivity of around $14,000 per m². Estimates of the floorspace productivity of each individual supermarket are contained in Section 4.2.2.

Table 3-3 shows the floorspace within each of the main supermarkets within Hamilton City. The eight Countdown supermarkets contain over half (57%) of the floorspace, with an average size of 3,600 m². These include a range of supermarket sizes, with smaller supermarkets typically located within suburban locations serving more localised markets. The larger supermarkets are often located more centrally in areas with more geographically extensive catchments.

The remaining floorspace is split relatively evenly across the New World (22%) and Pak ‘N Save (21%) brands. New World contains the two smallest supermarkets of 1,500 m² each in Glenview and Hillcrest, as well as two larger supermarkets Rototuna and Te Rapa that serve wider catchment areas. Pak ‘N Save has the largest average size of 5,400 m², with two supermarkets at the upper end of the size range within Hamilton. The Mill Street store, at nearly 6,000 m², is currently Hamilton City’s largest supermarket. These stores are located centrally and serve expansive geographic catchments.

The proposed Pak ‘N Save, at around 6,400 m², would be Hamilton City’s largest supermarket. It would be nearly double the size of Hamilton City’s overall supermarket average, and over four times the size of the smaller New World supermarkets. Its large size and central location mean that it is likely to draw from a wide geographic area.

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12 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. M.E’s estimates of individual supermarket floorspace were very similar to those that were contained within with original CAR. For further information, refer to Section 4.2.1.

13 Total sales estimates have been developed through a triangulation of approaches. This includes M.E’s Retail Demand Model, which has been tested within the Environment Court setting. For further information, refer to Section 4.2.1.
Table 3-3: Estimated Floorspace (GFA) by Hamilton City Supermarket, 2018

<table>
<thead>
<tr>
<th>SUPERMARKET</th>
<th>FLOORSPACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countdown Rototuna</td>
<td>3,600</td>
</tr>
<tr>
<td>Countdown Te Rapa</td>
<td>4,200</td>
</tr>
<tr>
<td>Countdown Chartwell</td>
<td>2,900</td>
</tr>
<tr>
<td>Countdown Nawton</td>
<td>2,900</td>
</tr>
<tr>
<td>Countdown Dinsdale</td>
<td>2,400</td>
</tr>
<tr>
<td>Countdown CBD</td>
<td>4,800</td>
</tr>
<tr>
<td>Countdown Bridge Street</td>
<td>4,200</td>
</tr>
<tr>
<td>Countdown Claudelands</td>
<td>4,000</td>
</tr>
<tr>
<td>New World Glenview</td>
<td>1,500</td>
</tr>
<tr>
<td>New World Hillcrest</td>
<td>1,500</td>
</tr>
<tr>
<td>New World Rototuna</td>
<td>4,000</td>
</tr>
<tr>
<td>New World Te Rapa</td>
<td>4,400</td>
</tr>
<tr>
<td>Pak 'N Save Clarence Street</td>
<td>4,700</td>
</tr>
<tr>
<td>Pak 'N Save Mill Street</td>
<td>6,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>51,000</strong></td>
</tr>
</tbody>
</table>

The spatial distribution of these supermarkets is shown in Figure 3-1. They are distributed across a range of locations across Hamilton City. Central locations within the City Centre and Te Rapa typically contain more than one supermarket and brand. Conversely, with the exception of Rototuna, the main supermarkets are relatively evenly spaced within the outer suburban area, with each location containing only one supermarket. These supermarkets are consequently relatively dominant within their immediate local area.
Figure 3-1: Spatial Distribution of Supermarkets in Hamilton City, 2018
3.4 Supermarkets and Urban Spatial Economic Structure Within Hamilton City

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

- **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)”.
- **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)”.
- **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)”.
- **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)”.
- **Tier 5 =** Localised activity in the Events Facilities Zone.
- **Tier 6 =** Agglomerations of activities within the Commercial Fringe Zones.

There are two major nodes of activity within Hamilton’s centres hierarchy. The City Centre forms the main node of activity and has historically been the main urban centre within Hamilton City. More recently, the development of The Base, a large sub-regional centre in northern Hamilton, has seen the establishment of a large amount of commercial activity in this location, creating a somewhat dual centre spatial structure within Hamilton City. Retail makes up a large share of the activity at The Base, and there has been a corresponding decline of retail activity within Hamilton’s central city area.

In addition to the activity within the sub-regional centre zoned area, a large volume of retail and other household services activity has located within the Business 4 Large Format Retail and Industrial Zones around the edges of The Base, effectively expanding the size of the sub-regional centre. A major objective of the Plan is to re-establish the primacy of Hamilton’s City Centre.

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
A key policy requirement of the Plan is to ensure that activity does not undermine the centres hierarchy. Retail, as a major driver of urban form and how the city expands, 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. The spatial management of retail location therefore plays a core role in achieving the strategic land use and sustainable resource management objectives and policies of the Plan and the Resource Management Act.

Most of the main supermarkets within Hamilton City are located within centres or within the business zones adjacent to centres that effectively function together with the centre. The exceptions are Countdown in Hamilton East/Claudelands and New World in Te Rapa, which are both located within the Industrial Zone away from an existing centre. The remainder of supermarkets are located within the top three tiers within Hamilton’s centres hierarchy – the City Centre, Sub-Regional Centres and Suburban Centres, or in areas immediately adjacent to these centres.

Supermarkets play an important role within the third tier – suburban centres – of the centres hierarchy. “Supermarkets commonly anchor these centres and between 20-30 outlets, comprising a variety of smaller specialist retailers, provide retail, limited office, community and other services to the suburban population on an integrated basis (ODP, p6-7)”. 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.
4 M.E Retail Economic Modelling

4.1 Introduction/Scope

M.E have been commissioned by HCC to conduct further economic assessment to understand the likely effects of the proposed Te Rapa Pak ‘N Save. The objective is to understand the likely effects of the proposal on the existing centres network. Supporting Hamilton’s centres hierarchy is a key objective of the Plan.

“The focus of the business centres’ hierarchy is to manage existing centres to ensure they retain and enhance their function, vitality, viability and amenity as focal points for a diverse range of activities needed by the community (ODP, p6-1)”.

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.

The original CAR provided an estimate of changes in the sales of some of these existing supermarkets within the surrounding centres with the introduction of the proposed store. As outlined in Section 2.4, no information was provided on how these sales estimates were constructed, including any information on the spatial patterns of spending flows. This is core information necessary to understand the likelihood of the estimated effects. Moreover, M.E’s technical assessment found that the sales estimates that were provided were based on a range of market assumptions that we consider are not supported by the information available on Hamilton City’s supermarket sector, or the supermarket sector more broadly.

Consequently, M.E 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. 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 widely applied, for example in urban transport modelling where it is a core component (for example, Auckland Council’s ART3 model for Auckland)\(^\text{14}\). 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.

This section outlines the methodology used to construct the model and the modelling results. It includes an outline of the base market situation used within the model in Hamilton; data sources, input assumptions and the structure of the model; an outline of the modelled scenarios; the modelled results; and a comparison of the results to those contained within the applicants’ earlier retail distribution analysis.

4.2 Methodology

4.2.1 Data and Information Sources

A range of data sources have been used to construct the retail gravity model. These are used to estimate different parts of the model as described below:

**Existing Supermarket Supply**

The websites of the three main supermarket brands (Countdown, New World and Pak ‘N Save) were used to identify all of the supermarkets and their locations within Hamilton City and the surrounding districts. These were then coded into the GIS system as part of the base model construction. Floorspace estimates of these supermarkets were obtained from a variety of sources through a desktop internet search of available information. These were triangulated with the measurement, within GIS, of the supermarket buildings within aerial photographs.

Supermarket information within the surrounding districts within the Waikato Region were also included within the model. These were included to enable the gravity functions within the model to correctly take into account the supply in other areas. This is important as the model is constructed across the wider Hamilton City, Waikato District and Waipa District area to reflect the wider operation of the market.

**Retail Demand**

M.E’s Retail Demand Model (RDM) was used to obtain estimates of the supermarket and grocery store demand for each origin area. The RDM includes demand from the main drivers of demand: households, workers, businesses and tourists. It applies detailed customised retail spending data (i.e. structures of spending) to 210 different household types that are formed from the key factors that affect spending (income, household composition and age structure). Spending profiles of workers, businesses and tourists are also included in the model using tourism expenditure data and regional inter-industry spending flows data.

The combination of these approaches produces a total estimate of supermarket spending demand arising from the types of households, businesses and tourists located within each origin area.

Population projections from Statistics New Zealand have been used together with M.E Economic Futures Model (EFM) employment projections and MBIE tourism forecasts to produce future estimates of demand within each area.

**Spatial Spending Patterns**

Customised data was obtained from Marketview Ltd on the electronic card transactions across different retail groupings within Hamilton City and the surrounding districts. Marketview data provides important
information on the detailed spatial structure of spending flows. It is a detailed origin-destination dataset that shows the value and number of electronic transactions from consumers living within each area origin and how these are met as sales at different spending destinations. The data shows the quantity of spending within the centre coming from customers living within different neighbourhoods across Hamilton City, and the shares from each of the surrounding districts and the rest of New Zealand. The data also identifies how the retail spending within each neighbourhood is distributed across different retail locations.

Two customised datasets were obtained for construction of the gravity model. The first was a detailed origin-destination dataset of total spending flows from each of 300 neighbourhood areas in Hamilton City to 14 specified centres within Hamilton City. Each centre was formed by a supermarket and a couple of other smaller retailers. This dataset also contained the spending flows into these centres from Waikato and Waipa districts and the rest of New Zealand.

The second dataset is another detailed origin-destination dataset of supermarket and grocery stores spending flows from each of the 300 neighbourhood areas in Hamilton City to the 14 specified centres in aggregate, the rest of Hamilton City, each of the districts within the Waikato Region and the rest of New Zealand. This dataset also contained the spending flows into these destinations from Waikato and Waipa districts and the rest of New Zealand. As such, the data shows what share of the supermarket spending from each origin area is met within each destination.

These datasets provide the spatial structure of the spending flows that drive the gravity functions within the model. They are fundamental to identifying the distance decay functions of each of the centres and highlight the important differences between each supermarket. This spatial structure is then applied to the RDM demand estimates to distribute these spending flows spatially.

Centre Sales Estimates

The supermarket sales have been estimated at each centre through a triangulation of approaches. The sales have initially been estimated through the application of the Marketview spatial structure of spending flows to the RDM demand estimates at each origin, where sales are a function of the share of demand flowing from each catchment. These have been triangulated against the M.E’s in-house estimates of sales using a combination of floorspace data, national and sub-national floorspace productivities and employment data at each location.

The structure of the distribution of sales across the different supermarkets has been compared between the initial estimates of centre sales by applying the Marketview spatial structure to the RDM demand and the distribution of the sales across each centre from the customised Marketview data identified sales levels in each centre.

Distance Calculations

M.E have used GIS to produce a series of distance matrices that have been applied in the model. These matrices contain the road network distance from the centre of each neighbourhood origin to each of the spending destinations. A distance matrix has also been produced containing the road network distance

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15 Each neighbourhood area is formed by Marketview Ltd through an aggregation of groupings of 3-4 contiguous meshblocks.

16 These need to be compared on a percentage basis as the Marketview data does not capture all spending – i.e. it captures most of the electronic sales data from households and tourists, but does not capture cash sales or business spending.
from each meshblock centroid to each of the spending destinations. This allows new supermarkets to be added and tested within the model.

4.2.2 Base Market Situation

In 2018 there was an estimated $1,109 million of supermarket and grocery store demand within Hamilton City, Waikato District and Waipa District. Over half (58%; $650 million) of this demand originated within Hamilton City, with the remainder across the Waikato and Waipa districts (see Table 4-1).

It was estimated that nearly two-thirds of the total demand across the three TLAs was met at stores (both main supermarkets and other supermarkets and grocery stores) within Hamilton City (64%; $705 million). In addition, there was a further $84 million of demand from the rest of New Zealand, amounting to a total estimated $789 million of supermarket and grocery store demand met at Hamilton City stores. Stores within Hamilton capture 85% of the demand arising within the city, as well as a substantial share (41%) of the demand arising from within the Waikato District. A smaller share (23%) of the demand arising from Waipa District is met within Hamilton City.

Total supermarket and grocery demand across Hamilton City, Waikato District and Waipa District, within the model, is projected to increase by around 72% (+$800 million) over the next 25 years to 2043. Over half (61%; $489 million) is projected to occur within Hamilton City, where demand is projected to grow at a similar rate (2.3% pa) to the Waikato District (+$192 million). Demand arising within Waipa District is expected to grow at a slower rate (1.8% pa), amounting to a net increase of $119 million.

Demand met at supermarkets and grocery stores within Hamilton City is projected to increase by 71% over the next 25 years, to $1.35 billion in 2043 (a net increase of $562 million). Three-quarters of the projected net increase is projected to occur from demand originating from within Hamilton City.

Both demand and sales are projected to grow at a faster rate than households due to projected real increases in spend per household, as well as businesses and tourists.

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17 The overall supermarket demand estimates are broadly similar at the Hamilton City level between the M.E Retail Demand Model and the PEL Retail Expenditure Model in the CAR. The shares of demand within Hamilton City by origin are also consistent between the models. Empirical data (Marketview) on the spatial spending flows has been used to establish the spatial origin-destination structure of this demand.
The model estimates total sales of $713 million\textsuperscript{18} across the 14 main supermarkets within Hamilton City in 2018. The sales estimated in the base year for each supermarket are shown in Table 4-2 below. The existing Pak ‘N Save supermarkets have the largest estimated sales at $136 million for the Mill Street store and $93 million for the Clarence Street store. Sales at other stores range from between an estimated $19 million to $50 million, with most supermarkets having sales over $35 million. Nawton Countdown and Glenview New World have the smallest estimated sales at $19 million and $27 million respectively, with both located in outer suburban areas.

Table 4-2 also contains the supermarket floorspace and, from this, the estimated floorspace productivity. The average floorspace productivity amounts to around $14,000 per m\textsuperscript{2}, with productivities ranging from $6,700/m\textsuperscript{2} to $30,700/m\textsuperscript{2}. It is important to consider both floorspace productivity and total sales together. Several supermarkets (Hillcrest, Dinsdale and Glenview) appear to have high floorspace productivities ($30,700/m\textsuperscript{2}, $18,300/m\textsuperscript{2} and $17,900/m\textsuperscript{2} respectively), although this is partly driven by their small floorspace size. The sales of Hillcrest and Dinsdale are both similar to the overall average, with Glenview having the second smallest sales.

The larger Pak ‘N Save stores have estimated floorspace productivities around $20,000 to $23,000 per m\textsuperscript{2}. New World stores have an overall average floorspace productivity of $15,000, ranging from $11,200/m\textsuperscript{2} at Te Rapa to $30,000/m\textsuperscript{2} at Glenview.

Countdown stores have on average lower estimated floorspace productivities, at an overall average of $10,800/m\textsuperscript{2}. These range from $6,700/m\textsuperscript{2} at Nawton to $18,300/m\textsuperscript{2} at Dinsdale. It is of note that Countdown Nawton has the lowest supermarket sales within Hamilton City, and has a significantly lower floorspace productivity. It serves a geographically constrained catchment, with around three-quarters of its sales originating from consumers within two kilometres of the supermarket.

\textsuperscript{18} This is the component of Hamilton supermarket and grocery sales (total of $789 million) that occurs within the main supermarkets within Hamilton. The remaining $76 million occurs within smaller supermarkets and grocery stores.
The estimated spatial structure of sales for each main supermarket and the remainder of supermarket and grocery stores is shown in Table 4-3. It shows the estimated share of sales from each supermarket that come from demand in Hamilton City, Waikato District, Waipa District and the Rest of New Zealand. Overall, it is estimated that 70% of the sales are to customers within Hamilton City. The remainder of sales are to demand arising within Waikato District (14%), Waipa District (6%) and the rest of New Zealand (10%).

The spatial structure of sales differs substantially between supermarkets. A number of supermarkets have significantly higher shares of their sales to customers within the Waikato District. Countdown (27%) and New World (19%) within Te Rapa have catchments that extend substantially into the Waikato District – it is estimated that these extend north and west from Hamilton City with direct access from State Highway 1. Dinsdale Countdown, and Rototuna and Hillcrest New Worlds also have high shares of sales to consumers within the Waikato District and are more likely to serve demand arising from around the outer edges of Hamilton. There is a substantial population base (8.7% of Waikato Districts population), located within Tamahere-Tauwhare, close to Hillcrest New World. Dinsdale Countdown and Glenview and Hillcrest New World’s also have larger than average shares of their sales to Waipa District consumers.

Conversely, a number of the Countdown supermarkets have higher shares of their sales to consumers located within Hamilton City. In particular, these include Rototuna, Chartwell, Nawton and the CBD Countdowns. At 87%, Nawton has the highest share of sales to local consumers – it is a small supermarket that anchors a small suburban supermarket, with a very localised catchment area.
4.2.3 Model Construction and Parameters

M.E have constructed a retail gravity model to model the potential retail distributional effects of changes to the Hamilton City supermarket supply. At a high level, the model allocates demand that arises within each catchment\(^{19}\) to sales at different supermarkets. It models how this distribution, and therefore sales, may change as a result of changes in the supermarket market.

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. The base situation within the model is also calibrated using the spatial origin-destination patterns of spending within the Marketview data. It performs an optimisation process using the combination of these factors.

The model 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-optmise and reallocate the demand across the network of stores. It also allows existing stores to be removed from the supply-side structure and the effects re-modelled across the remaining store network (or a combination of changes).

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. Two components of the model operate at different spatial scales, with one optimising the distribution within Hamilton City and the other optimising across the surrounding Waikato and Waipa districts. It was

\(^{19}\) 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.
determined during the model building process that this was a more appropriate way of modelling the processes that occur at two different spatial scales.\(^\text{20}\)

The gravity functions across these wider areas also take into account the supply of supermarkets across all districts within the Waikato Region. This is because the presence of supermarkets within other districts needed to be incorporated within the gravity functions to ensure the correct allocation of demand occurred within the model by taking into account the supply within these areas.

The share of demand originating from the Rest of New Zealand was held fixed within the model. This is because it is unlikely that the addition or removal of a supermarket within Hamilton City would have any material impact on tourism patterns to the City.

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.

4.2.4 Modelled Scenarios

Addition of the Proposed Te Rapa Pak ’N Save

The effect of the proposed store has been modelled as the first scenario. The new store has been added into the appropriate meshblock location in Te Rapa with a floorspace size of 6,358 m\(^2\) GFA.

A total annual sales value of $100 million\(^\text{21}\) has been assumed for the new store. In comparison, sales have been estimated at $136 million for the Mill Street Pak ’N Save and $93 million at the Clarence Street Pak ’N Save. Consequently, this is likely to be a conservative estimate of sales as the proposed store has a larger floorspace size than either of the existing Pak ’N Save stores. It is also located within Te Rapa, giving it significant potential to draw from an expansive geographic catchment area.

The $100 million estimated sales value equates to a floorspace productivity of around $15,700/m\(^2\). This is around 20% to 30% lower than the floorspace productivities of the existing Pak ’N Save stores at $19,900/m\(^2\) (Clarence Street) and $22,800/m\(^2\) (Mill Street). It is 13% higher than the city-wide average floorspace productivity of around $14,000/m\(^2\).

The distance decay function, which helps determine the extent of the catchment, has been set at the same rate at Countdown Te Rapa.

\(^\text{20}\) When the model was optimised spatially across the area as a whole without the two-stage process (i.e. the same gravity functions were applied for each store extending across both the Hamilton City urban area as well as the much larger distances within the surrounding districts), the calibration process of the gravity function showed they did not provide a good fit for either market. It was more appropriate to have separate gravity functions (i.e. Hamilton City stores to demand within Hamilton City vs. Hamilton City stores to demand across the surrounding districts) to model each component of demand, with the results then combined.

\(^\text{21}\) This has been assumed to apply from the base year. It is below the floorspace productivity of existing Pak ’N Save stores within Hamilton City, and is below the total sales value of the Mill Street Pak ’N Save, which has a smaller floorspace area.
Overall, it has been assumed that 35% of the sales from the proposed store will be drawn from the Waikato and Waipa districts, and 13% from the rest of New Zealand. These have been used as inputs into the gravity model which mean around half of the sales are run through the model across the Hamilton City gravity functions, and 35% across the Waipa and Waikato district gravity functions. This represents a similar share of sales from the surrounding districts as Countdown Te Rapa. Monte Carlo simulations were undertaken to establish the appropriate share (35%).

If a smaller share were assumed to occur from the surrounding districts, it would result in a higher share of sales being redirected away from supermarkets within Hamilton City that had higher shares of their demand from more localised catchments within the city (e.g. Nawton Countdown). If a larger share were assumed, then the effect on Hamilton City supermarkets with geographic catchments extending particularly into the Waikato District would be larger (e.g. Te Rapa Countdown and New World).

Closure of Nawton Countdown

A further scenario was modelled based on the results of the initial scenario of the addition of the proposed store. In addition to the same parameters as the first scenario, this scenario then modelled the closure of the Nawton Countdown. It showed how the sales would be redistributed across the existing store network, including the proposed store.

4.2.5 Sensitivity Testing/Alternative Scenarios

Two alternative scenarios were modelled to show the retail distributional effects of the proposed store attracting a smaller total amount of sales. These scenarios used the same parameters as the initial scenario, but instead assumed total sales values of $60 million and $80 million for the proposed stores.

The purpose of this additional modelling was to provide comparison to the modelled results in the initial Centres Assessment Report submitted by the applicant, where a sales value of $60 million was assumed.

We consider these scenarios are very unlikely to occur. This is because they are substantially different to the performance of the existing Pak ‘N Save supermarkets. Sales values of $60 million or $80 million are significantly below the sales values of the existing Pak ‘N Saves of $93 million (Clarence Street) and $136 million (Mill Street). This is an unlikely scenario for a store that is larger and located on a main arterial road that provides connection to an expansive geographic area.

These smaller sales values would result in floorspace productivities substantially below the existing Pak ‘N Save stores, and below the city average. Sales of $60 million would have to assume a floorspace productivity less than half (41% to 47%) of the existing Pak ‘N Save stores. It would also be substantially below the productivity of most other Hamilton City supermarkets.

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22 Importantly, the share of sales allocated across the surrounding districts still competes for demand in the gravity functions with the other Hamilton City supermarkets as the model similarly assumes shares of other supermarkets sales originate from outside of Hamilton City.

23 Monte Carlo simulation is a technique used to calculate the uncertainty in deterministic (non-random) models. The technique calculates overall uncertainty (i.e. possible range of model outputs) of the model by performing numerous models runs of varying parameter values, selected randomly from a statistical distribution used in the model.
4.3 Results

4.3.1 Addition of Proposed Store

Base Year

Table 4-4 contains the modelled results of the first scenario of adding the proposed Te Rapa Pak ‘N Save to the existing stores network. The modelled parameters for the new store assume $100 million in sales, 35% of sales being drawn from the Waikato and Waipa districts and a distance decay function similar to the Te Rapa Countdown.

The table shows that the two existing Te Rapa stores (New World and Countdown) are likely to experience the greatest percentage impacts (i.e. % reduction in sales) as a result of the proposed store. New World has a modelled percentage impact of 30%, and Countdown, 29%. The large impacts on these stores are due to large overlaps within the catchment areas with the proposed store catchment. These percentage impacts equate to a decrease of $14.62 million and $11.43 million in sales respectively. Rototuna New World is expected to have the next largest percentage impact of 19% (-$9.45 million sales). This is followed by Nawton Countdown, Chartwell Countdown and Rototuna Countdown, with impacts of around 14% to 15%.

<table>
<thead>
<tr>
<th>SUPERMARKET</th>
<th>SUBURB</th>
<th>ESTIMATED SALES ($m) SCENARIO</th>
<th>Impact on Sales</th>
<th>% Sales sourced from</th>
<th>FLOORSPACE PRODUCTIVITY (sales $/m²) SCENARIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countdown</td>
<td>Rototuna</td>
<td>$36 $31</td>
<td>14% $4.94</td>
<td>5%</td>
<td>$10,000 $8,600</td>
</tr>
<tr>
<td>Countdown</td>
<td>Te Rapa</td>
<td>$39 $32</td>
<td>29% $11.43</td>
<td>12%</td>
<td>$9,300 $6,600</td>
</tr>
<tr>
<td>Countdown</td>
<td>Chartwell</td>
<td>$38 $33</td>
<td>14% $5.34</td>
<td>5%</td>
<td>$13,200 $11,300</td>
</tr>
<tr>
<td>Countdown</td>
<td>Nawton</td>
<td>$19 $16</td>
<td>15% $2.91</td>
<td>3%</td>
<td>$6,700 $5,700</td>
</tr>
<tr>
<td>Countdown</td>
<td>Dinsdale</td>
<td>$45 $41</td>
<td>8% $3.53</td>
<td>4%</td>
<td>$18,300 $16,900</td>
</tr>
<tr>
<td>Countdown</td>
<td>CBD</td>
<td>$46 $45</td>
<td>4% $1.97</td>
<td>2%</td>
<td>$9,500 $9,100</td>
</tr>
<tr>
<td>Countdown</td>
<td>Bridge Street</td>
<td>$39 $38</td>
<td>2% $1.62</td>
<td>2%</td>
<td>$9,300 $8,900</td>
</tr>
<tr>
<td>Countdown</td>
<td>Claudelands</td>
<td>$50 $47</td>
<td>2% $2.68</td>
<td>3%</td>
<td>$12,500 $11,800</td>
</tr>
<tr>
<td>New World</td>
<td>Glenview</td>
<td>$27 $26</td>
<td>5% $1.22</td>
<td>1%</td>
<td>$17,900 $17,100</td>
</tr>
<tr>
<td>New World</td>
<td>Hillcrest</td>
<td>$46 $42</td>
<td>9% $4.04</td>
<td>4%</td>
<td>$30,700 $28,000</td>
</tr>
<tr>
<td>New World</td>
<td>Rototuna</td>
<td>$50 $40</td>
<td>19% $9.45</td>
<td>10%</td>
<td>$12,400 $10,000</td>
</tr>
<tr>
<td>New World</td>
<td>Te Rapa</td>
<td>$49 $34</td>
<td>30% $14.62</td>
<td>15%</td>
<td>$11,200 $7,800</td>
</tr>
<tr>
<td>Pak ‘N Save</td>
<td>Clarence Street</td>
<td>$93 $88</td>
<td>6% $5.42</td>
<td>6%</td>
<td>$19,900 $18,700</td>
</tr>
<tr>
<td>Pak ‘N Save</td>
<td>Mill Street</td>
<td>$136 $120</td>
<td>12% $16.43</td>
<td>17%</td>
<td>$22,800 $20,000</td>
</tr>
<tr>
<td>Pak ‘N Save</td>
<td>Te Rapa</td>
<td>$97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$713 $725</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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. Figure 4-1 below shows these sales values are substantially below all other Hamilton City Supermarkets.

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24 The modelled outputs show a sales value of $97 million. Differences between the inputs and outputs are an expected function of the modelling process where the gravity function may allocate a small share of the sales to other supermarkets based on the optimisation process.
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 4-1: Modelled Sales Estimates of Hamilton City Countdown Supermarkets with the Proposed New Store, 2018

![Graph showing modelled sales estimates of Countdown supermarkets in Hamilton City](image-url)

The modelled impact on Te Rapa Countdown shows that this supermarket is also likely to result in a floorspace productivity considerably lower than other Hamilton City supermarkets. It would result in a floorspace productivity of around $6,600/m², and would make Te Rapa Countdown the second smallest Countdown (by sales) in Hamilton City, and the third smallest main supermarket in Hamilton City overall.

We consider it significant that these two supermarkets with the resulting lowest floorspace productivity and sales are both Countdown supermarkets, that are in adjacent locations within their store network (i.e. within the north-western quadrant of Hamilton City). It is also of note that there are only two supermarkets within the western suburban edge of Hamilton City (Nawton and Dinsdale) and that these are both Countdowns.

In light of these modelled outputs and the configuration of Hamilton’s supermarket network, further modelling was undertaken to estimate how sales within Nawton Countdown’s catchment may be redirected if the supermarket were removed from the store network through closure. These are presented in Section 4.3.2.
As well as the percentage impacts on existing stores, Table 4-4 also shows the net impacts of sales. These also provide a picture of where the proposed stores of sales would be drawn from. The Mill Street Pak ‘N Save has the largest modelled net impact of -$16.43 million in sales. This suggests about one-sixth (17%) of the new stores sales being drawn away from the Mill Street Pak ‘N Save. However, due to the large size of the Mill Street store, the net impact, although larger than from other stores, results in smaller impact of 12%. The Mill Street Pak ‘N Save is modelled to continue to have a high floorspace productivity of around $20,000/m² following the addition of the new store.

Overall, Table 4-4 (column ‘% Sales sourced from’) shows that over two-thirds (69%) of the sales from the proposed store are likely to be drawn from the surrounding supermarkets. A further 19% of sales are shown to be drawn from supermarkets in the rest of Hamilton City. This corresponds to the expansive reach typical of Pak ‘N Save stores. The remaining sales are drawn from consumers across the Waikato and Waipa districts, where sales are redirected away from non-Hamilton City stores. This also reflects the large geographic reach of Pak ‘N Save stores, and its Te Rapa location, where the catchment is likely to extend substantially into the Waikato district area.

**Changes Through Time**

Table 4-5 and Table 4-6 show the projected sales of Hamilton City’s main supermarkets through time under both the existing supermarket supply structure (Table 4-5) and the existing structure with the addition of the proposed store (Table 4-6).

Under the base case (existing supply structure), growth in sales is a function of demand growth within the catchments served by the supermarkets. Demand growth within the catchments are 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 largest growth in sales is projected to occur in the Te Rapa supermarkets and Glenview New World. This higher growth is predominantly driven by urban expansion of Hamilton City in the Peacocke area and along the northern edge of the city.

The Te Rapa supermarkets are currently the main supermarkets serving these areas within the north. However, it is important to note that this does not suggest they are in the most efficient location to serve this growth. A new suburban centre has been identified within the Plan in Rotokauri, which is located centrally to this projected growth.

Growth in Glenview is largely a function of its location relative to the growth cell area of Peacocke. Urban expansion within the Peacocke area is likely to include the development of a new centre, which may form a location for a future supermarket to serve a share of projected demand growth within this area.

Smaller amounts of sales growth are generally projected for the smaller supermarkets with geographically smaller catchment areas that serve already established urban areas, as well as a number of supermarkets within the central urban areas of Hamilton City. These include Rototuna, Chartwell, Dinsdale, CBD, Bridge Street and Claudelands Countdown’s, and Hillcrest and Rototuna New World’s.

Nawton, the smallest suburban supermarket, is projected to have growth in line with the Hamilton City supermarket average (+69% over 2018-2043), which is faster than the growth in most other smaller suburban supermarkets. This is due to growth within the northern part of its catchment on the edge of the
Rotokauri area, while the rest of its catchment is projected to experience growth in line with other established urban areas of Hamilton City. It is important to note that if a new supermarket establishes in the future within the Rotokauri future suburban centre, then it is also likely to serve a share of this growth, thus reducing the sales growth currently attributed to Nawton within the modelled base scenario.

Sales growth rates for the existing Pak ‘N Save supermarkets within the already established urban areas are generally projected to be above those of the smaller supermarkets within existing urban areas. This is due to the geographically extensive nature of the Pak ‘N Save store catchments, meaning that the stores are likely to attract a share of the demand growth from urban expansion at the urban edge of Hamilton City.

Table 4-5: Projected Supermarket Sales – Existing Supply Structure – 2018-2043

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

The difference in future sales growth with the addition of the proposed store can be seen in Table 4-6. The largest differences in future sales growth occur in the existing Te Rapa supermarkets, although their future sales growth are still projected at above the overall supermarket city total.

The next largest differences occur for Nawton Countdown and Pak ‘N Save Mill Street. This shows that, with the addition of the proposed store, 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.
4.3.2 Closure of Nawton Countdown

Further modelling was undertaken to test the effect of a potential closure of the Nawton Countdown. The initial modelling provided outputs that suggested that the addition of the proposed store may impact upon the viability of Nawton Countdown. The scenario modelling resulted in a total sales value and floorspace productivity at Nawton substantially below all other Hamilton City supermarkets.

The potential market change that could occur in the supermarket supply at Nawton is important in understanding the likely effect of the proposed store on Hamilton’s centres hierarchy. This is because Nawton is a suburban centre that is anchored by its supermarket. Under the ODP, suburban centres play an important role in their surrounding residential catchments. They provide a range of “activities and services that can reduce reliance on car travel for meeting day-to-day requirements (ODP, p6-7)” and are often anchored by supermarkets.

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.

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.
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.

Further modelling was consequently undertaken to understand how the sales would be likely to be redistributed if Nawton were to close. The modelled scenario uses the same parameters as the previous scenario (i.e. the existing centres network with the addition of the proposed Pak ‘N Save at Te Rapa) and also has the Nawton Countdown removed from the store network.

The further modelling results are displayed in Table 4-7. The first column shows the estimated sales for each supermarket with the addition of the proposed store and with Nawton Countdown operating. The second column shows the estimated sales with the addition of the proposed store but with the closure of Nawton Countdown. The third column shows the net difference in sales between these two scenarios, which effectively estimates how Nawton Countdown’s sales may be redistributed across the remaining supermarkets. The last column expresses this as a share of the redistributed sales.

The modelled results in Table 4-7 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.

On this basis, closure of Countdown Nawton would see Countdown’s total sales in Hamilton fall by 4.3%. Given the modelling results, we consider that it is more likely that a supermarket will remain open within Nawton centre. 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. Alternatively, we consider 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.
4.3.3 Alternative Proposed Store Total Sales

The following tables (Table 4-8 and Table 4-9) show the modelled results for the alternative sales values of the proposed Te Rapa Pak ‘N Save. The same modelling parameters as the first scenario are used in these scenarios (see Section 4.3.1), but instead using sales values of $80 million and $60 million for the proposed store.25

The patterns of the impacts across the store network remain the same as the initial scenario where $100 million sales are applied. However, the scale of the impacts is proportionately less. The impacts on the Te Rapa supermarkets range from 19% to 24%, in comparison to 29% to 30% under the initial scenario. Impacts on Nawton Countdown range from 9% to 12%, in comparison to 15% under the initial scenario.

We consider the scale of these modelled scenarios to be unlikely given the implied low performance of the proposed store (refer to Section 4.2.5). The modelling has been undertaken to provide a comparison to the modelled impacts undertaken in the applicants original Centres Assessment Report using $60 million sales.

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25 The original CAR used sales estimates of $60 million and therefore has been included as a sensitivity test within this report to enable a more direct comparison of the modelling results at the same level of sales. Results at sales of $80 million have also been included to provide further information on the midpoint between the two sales estimates (of $60 million in the CAR and the M.E estimate of $100 million).
4.4 Comparison to PEL Economic Modelling

This section compares the modelled results of the M.E modelling with the modelling undertaken in the original Centres Assessment Report (CAR). The CAR provided sales results for four areas. These include:

- Te Rapa – Countdown and New World combined.
- Rototuna – Countdown and New World combined.
- Nawton – Countdown.
- CBD – Mill Street Pak ‘N Save and Clarence Street Pak ‘N Save (the CBD Countdown’s were not included).

The M.E results have similarly aggregated to produce a comparison of results. The first comparison (shaded in yellow) is between the M.E base scenario modelling where $100 million of sales have been assumed at
the proposed store, and the CAR ("PEL Modelling") where $60 million of sales were assumed. The further alternative sales results, at $80 million and $60 million, have also been included in the table.

The comparison is shown in Table 4-10. Importantly, this table also shows the assumed inputs in terms of the base sales and floorspace productivity for each set of modelling (the stores floorspace is the same between both sets of modelling).

Table 4-10: Comparison of M.E and Centres Assessment Report Retail Distributional Modelled Results

<table>
<thead>
<tr>
<th>SOURCE AREA</th>
<th>ESTIMATED SALES ($m)</th>
<th>% Impact on Sales</th>
<th>% Sales sourced from</th>
<th>FLOORSPACE PRODUCTIVITY (sales $/m2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASE SCENARIO</td>
<td></td>
<td>% SCENARIO</td>
<td></td>
<td>BASE SCENARIO</td>
</tr>
<tr>
<td>M.E Modelling - $100m sales</td>
<td>Te Rapa</td>
<td>$88</td>
<td>$62</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Rototuna</td>
<td>$86</td>
<td>$71</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>Nawton</td>
<td>$19</td>
<td>$16</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>CBD Pak 'N Save</td>
<td>$230</td>
<td>$208</td>
<td>10%</td>
</tr>
<tr>
<td>M.E Modelling - $80m sales</td>
<td>Te Rapa</td>
<td>$88</td>
<td>$67</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Rototuna</td>
<td>$86</td>
<td>$74</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Nawton</td>
<td>$19</td>
<td>$17</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>CBD Pak 'N Save</td>
<td>$230</td>
<td>$212</td>
<td>8%</td>
</tr>
<tr>
<td>M.E Modelling - $60m sales</td>
<td>Te Rapa</td>
<td>$88</td>
<td>$72</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>Rototuna</td>
<td>$86</td>
<td>$77</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Nawton</td>
<td>$19</td>
<td>$18</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>CBD Pak 'N Save</td>
<td>$230</td>
<td>$217</td>
<td>6%</td>
</tr>
<tr>
<td>PEL Modelling</td>
<td>Te Rapa</td>
<td>$50</td>
<td>$35</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Rototuna</td>
<td>$95</td>
<td>$84</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>Nawton</td>
<td>$30</td>
<td>$28</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>CBD Pak 'N Save</td>
<td>$205</td>
<td>$188</td>
<td>8%</td>
</tr>
</tbody>
</table>

Overall, the modelling shows 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 the M.E modelling than the PEL modelling (28%).

Larger differences emerge in the percentage and net impacts on other supermarkets. This is due to a combination of the difference in total sales assumed for the proposed store between each set of modelling, as well as the differences in the base sales assumed for the existing stores (column 1). These are discussed for each row in turn.

**Te Rapa Supermarkets**

Both sets of modelling have a 30% impact on sales values for the Te Rapa supermarkets (under the $100 million sales scenario). In contrast, where the same sales value ($60 million) is used, the M.E results show a 19% impact on the other Te Rapa supermarkets. At this scale, the net impacts (around $15 to $16 million) are similar, but the percentage effects are different due to large differences in the supermarket sales and floorspace productivity in the base market situation between the PEL and M.E modelled results across all scenarios.

These are two significantly sized supermarkets (within the Hamilton context), with a combined floorspace of 8,550 m2. The M.E modelling assumes a base sales level of $88 million across these two supermarkets,
resulting in an average floorspace productivity of $10,300/m². In contrast, the PEL modelling assumes $50 million in sales across these supermarkets, with a floorspace productivity of $5,800/m².

M.E consider that this base situation is unlikely as it would imply the two Te Rapa supermarkets must have some of the lowest turnover within Hamilton. Their turnover would be below that of Nawton Countdown, a smaller supermarket serving a very localised catchment, which is assumed at $30 million in the model. The basis for this sales allocation is unclear as both sets of modelling assume relatively similar levels of total supermarket sales within Hamilton City (refer to the original CAR).

Moreover, the PEL modelling results in a floorspace productivity of $4,100/m² across the two Te Rapa supermarkets with the addition of the proposed store (and possibly lower within one store if the sales are distributed unevenly across the two stores). M.E consider that floorspace productivities and sales values at these levels are likely to negatively affect the viability of these stores. We note this has not been considered within the original CAR.

The assumed spend within the existing Te Rapa supermarkets within the original CAR is also inconsistent with the CAR itself. The CAR (page 20) states that there are currently $107 million of supermarket sales within the Te Rapa Census Area Unit (CAU). If the CAR modelling then assumes that the two existing supermarkets only have a combined $50 million in sales, it is not clear, in the absence of other main supermarkets, where the remaining $57 million sales from the CAR are currently being met within Te Rapa. This appears to be a large inconsistency between the CAR base supermarket structure and the CAR sales modelling.

The M.E modelling estimates a higher percentage impact (17%) on the Rototuna supermarkets under the assumed $100 million sales position than the PEL modelling (12% impact). This is partly due to the differences in the assumed base case sales ($86 million in the M.E modelling and $95 million in the PEL modelling), and partly due to the difference in sales assumed for the proposed store. Under the M.E modelling using the same sales ($60 million), the impact becomes 10%.

Nawton Countdown

While both sets of modelling assume that 3% of the sales at the proposed store are drawn from Nawton Countdown, there are significant differences in the modelled results for Nawton Countdown between the M.E and PEL modelling. These differences are a function of both the differences in sales at the proposed store, as well as sizeable differences in sales in the base case at Nawton Countdown.

The PEL 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.

However, under the M.E modelling, the percentage impact is larger. There is an estimated impact of 15% under the $100 million sales scenario, and an impact of 9% under the $60 million sales scenario. This difference between the M.E and PEL modelling is primarily due to the difference in base sales, where the

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26 We note there is a Reduced to Clear discount grocery clearance store located within the CAU. However, we consider this is very unlikely to account for any major share of these sales.
estimated base sales at Nawton are $19 million (in the M.E modelling). This is reflected in the data used to estimate the sales. It is not clear how the base sales have been estimated for Nawton Countdown within the PEL modelling.

The differences at Nawton Countdown between the modelling are significant. The M.E modelling finds that the impact on the Nawton Countdown may adversely affect the viability of the store due to the resulting low sales values and floorspace productivity. Meanwhile, the PEL modelling finds a resulting floorspace productivity of $9,800 per m2, which is comparable to the floorspace productivities of many of the supermarkets in the base case and therefore unlikely to affect the viability of the supermarket.

CBD Pak ‘N Save

Both the PEL and M.E modelling find relatively similar impacts across the existing CBD Pak ‘N Save stores from the proposed store. The M.E modelling suggests impacts of 10% (or 6% under an alternative $60 million sales scenario), while the PEL modelling finds impacts of 8%.

The floorspace productivity across the existing Pak ‘N Save stores remains relatively high under both sets of modelling.
5 Travel Efficiency and Community Enablement

5.1 Retail Spatial Structure and Travel Access Patterns

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.

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.

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:

i. Distance decay where the influence of each retail area decreases with distance.
ii. 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.
iii. 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.
iv. 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.

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.
5.2 Travel Efficiency and Social Amenity

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.

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.

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.

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.

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 of smaller centres is redistributed as larger functions to the higher order centres.

5.3 Estimation of Travel Efficiency Effects

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. Indications of travel efficiency were calculated using the detailed spatial matrices of origin-destination spending flows that were produced by the gravity model under each supermarket supply scenario. This detailed catchment information provided a picture of the distance required to access retail for different communities in relation to the spending flows across the supermarket supply structure.

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27 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.
The total spending flows within the model were converted into trip numbers. The corresponding Marketview data on transaction numbers (that is provided together with sales information) formed an important input to this process. The outputs were matrices of trips from each neighbourhood to each supermarket destination.

These matrices were then multiplied by the road network distance matrices to produce estimates of the total distance travelled by households to supermarkets under each scenario of retail supply. The total distances travelled across the three supermarket supply scenarios were compared to identify the overall change in the total household supermarket travel within Hamilton City.

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. Outputs were consequently also expressed at the local scale to show the total travel distance of households in each of the 308 neighbourhood areas under each of the supply scenarios. These were mapped as the percentage changes to travel distances to show the spatial distribution of impacts on different neighbourhoods across Hamilton City.

### 5.4 Total Changes in Travel Efficiency

#### 5.4.1 Hamilton City Households

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

The estimated changes in travel efficiency between the different retail supply scenarios for Hamilton City households in accessing the main supermarkets are shown in Table 5-1. This table shows the total travel distance generated by the spending flows arising from the modelled household access patterns to each of the retail supply structures (scenarios). The base scenario represents the existing retail supply structure of supermarkets; scenario 1 represents the existing supply structure with the addition of the proposed Te Rapa Pak ‘N Save; and scenario 2 represents the existing supply structure with the addition of the proposed store and the removal of a supermarket at Nawton.

Table 5-1 shows that under the household supermarket access patterns in Scenario 1 (the addition of the proposed store), the average trip distance would increase by 0.19 kilometres to become 4.74 kilometres. This would result in an average of an additional 25 kilometres travelled per year for each household (relative to the existing retail structure). In total, across all households, this would result in an additional 1.533

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28 It was assumed for the supermarket sector that each transaction equated to one trip.
29 These are the existing retail supply structure (1), the existing retail supply structure together with the proposed store (2), and the existing retail supply structure with the proposed store and the removal of a supermarket at Nawton (3).
30 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.
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.

Table 5-1: Estimated Changes to Travel Efficiency of Hamilton City Households by Retail Supply Structure Scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Base scenario - existing retail structure</th>
<th>Scenario 1 - proposed store</th>
<th>Scenario 2 - proposed store and no Nawton supermarket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamilton City Households (2018)</td>
<td>61,500</td>
<td>61,500</td>
<td>61,500</td>
</tr>
<tr>
<td>Average supermarket trips (per household)</td>
<td>2.47</td>
<td>2.47</td>
<td>2.47</td>
</tr>
<tr>
<td>Average trip distance (km per household)</td>
<td>4.55</td>
<td>4.74</td>
<td>4.91</td>
</tr>
<tr>
<td>Weekly supermarket travel (km per household)</td>
<td>11.21</td>
<td>11.69</td>
<td>12.12</td>
</tr>
<tr>
<td>Annual supermarket travel (km per household)</td>
<td>585</td>
<td>610</td>
<td>632</td>
</tr>
<tr>
<td>Total annual supermarket travel (all households) (total km)</td>
<td>35,956,000</td>
<td>37,489,000</td>
<td>38,858,000</td>
</tr>
</tbody>
</table>

If Scenario 2 occurred where the supermarket at Nawton closed following the introduction of the proposed store at Te Rapa, 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.

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.

Figure 5-1 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.

The map shows that 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.

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%.

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 5-1: Modelled Changes to Hamilton City Household Supermarket Travel Efficiency with the Addition of the Proposed Store
The estimated effect on Hamilton City household travel if the supermarket at Nawton were to close is shown in Figure 5-2. This map shows the difference between Scenario 1 (the existing store network with the addition of the proposed store) and Scenario 2 (the existing store network with the addition of the proposed store and the closure of a supermarket at Nawton).

The effects on travel efficiency between the scenarios 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.
Figure 5-2: Modelled Changes to Hamilton City Household Supermarket Travel Efficiency between Scenario 1 and Scenario 2
5.4.2 Waikato District and Waipa District Households

The effect on supermarkets on travel efficiency has also been estimated for households in the Waikato and Waipa districts. The same approach\textsuperscript{31} has been undertaken using spending flows and transactions data, combined with the road network distances, to estimate the total distance across which supermarkets are accessed.

It has been estimated that Waikato and Waipa district households make an average of just over two trips to the main supermarkets each week, with an overall average trip distance of 29.5 kilometres. This equates to annual travel of 3,185 kilometres per household. In total, this amounts to a distance of 152.9 million kilometres travelled across all households per year.

The estimated changes in travel efficiency between the different retail supply scenarios for Waikato and Waipa district households in accessing the main supermarkets are shown in Table 5-2. This table shows the total travel distance generated by the spending flows arising from the modelled household access patterns to each of the retail supply structures (scenarios). The base scenario represents the existing retail supply structure of supermarkets; scenario 1 represents the existing supply structure with the addition of the proposed Te Rapa Pak ‘N Save; and scenario 2 represents the existing supply structure with the addition of the proposed store and the removal of a supermarket at Nawton.

Table 5-2 shows that under the household supermarket access patterns in Scenario 1 (the addition of the proposed store), the average trip distance would increase by nearly 1 kilometre to become 30.44 kilometres. This would result in an average of an additional 102 kilometres travelled per year for each household (relative to the existing retail structure). In total, across all households, this would result in an additional 4.9 million kilometres travelled in a year. This amounts to a 3.2% increase in the estimated travel undertaken by households in meeting their supermarket retail needs. If Scenario 2 occurred where the supermarket at Nawton closed following the introduction of the proposed store at Te Rapa, there would be a small decrease (-0.1%) in the estimated travel relative to Scenario 1.

\textsuperscript{31} The spending flows are generated by the gravity model as a function of demand by origin and distance from supply by location. It should be noted there is less empirical data underpinning the disaggregation of spatial flows within these districts than within Hamilton City, the main focus of the model. It has been assumed that a lower share (50%) of the transactions within these districts are made at the main supermarkets than in Hamilton City (72%) (although shares of spending are assumed to be similar to Hamilton City).
### Table 5-2: Estimated Changes to Travel Efficiency of Waikato District and Waipa District Households by Retail Supply Structure Scenario

<table>
<thead>
<tr>
<th>Area</th>
<th>Base scenario - current retail structure</th>
<th>Scenario 1 - proposed store</th>
<th>Scenario 2 - proposed store and no Nawton supermarket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waipa and Waikato District Households (2018)</td>
<td>48,000</td>
<td>48,000</td>
<td>48,000</td>
</tr>
<tr>
<td>Average supermarket trips (per household)</td>
<td>2.07</td>
<td>2.07</td>
<td>2.07</td>
</tr>
<tr>
<td>Average trip distance (km per household)</td>
<td>29.50</td>
<td>30.44</td>
<td>30.42</td>
</tr>
<tr>
<td>Weekly supermarket travel (km per household)</td>
<td>61.09</td>
<td>63.04</td>
<td>63.00</td>
</tr>
<tr>
<td>Annual supermarket travel (km per household)</td>
<td>3,185</td>
<td>3,287</td>
<td>3,285</td>
</tr>
<tr>
<td>Total annual supermarket travel (all households) (total km)</td>
<td>152,894,000</td>
<td>157,778,000</td>
<td>157,663,000</td>
</tr>
<tr>
<td>Total km net difference to base scenario</td>
<td>4,883,000</td>
<td>4,769,000</td>
<td></td>
</tr>
<tr>
<td>Total km % difference to base scenario</td>
<td>3.2%</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>Total km net difference to scenario 1</td>
<td>-115,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total km % difference to scenario 1</td>
<td>-0.1%</td>
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</tbody>
</table>

Areas of Waikato District on the northern edge of Hamilton City, closest to the proposed store, are likely to experience an increase in household travel efficiency (between 1% and 11%) with the addition of the proposed store. This is due to a combination of the redirection of spending flows away from supermarkets further north in Huntly, and partly in Ngaruawahia, to the proposed store, as well as spending flows redirected to the new store from other more distant supermarkets within Hamilton City.
6 Conclusions

The supermarket retail market in Hamilton City is complex and reflects Hamilton’s wider economic role as a main urban centre within the surrounding districts. Supermarkets within Hamilton City serve the city’s urban area, as well as a large share of the demand from the surrounding districts, particularly Waikato District. This demand is significant, making up around one-fifth of Hamilton’s supermarket sales overall. Many of the main supermarket catchments thus extend substantially into the surrounding rural area.

All three of the main supermarket brands – Countdown, New World and Pak ’N Save – are well-established within the Hamilton market, with a combined 14 main supermarkets. These range in size from a small supermarket serving a localised catchment with estimated annual sales of $19 million, up to a larger supermarket drawing from across a large share of Hamilton’s urban area, with estimated annual sales of $136 million.

In total, there is approximately 51,000 m2 of floorspace (GFA) across these supermarkets. They serve an estimated $713 million (90%) of the $789 million in supermarket sales within Hamilton City. This equates to an average floorspace productivity of around $14,000/m2.

The proposed Pak ’N Save store would be Hamilton City’s largest supermarket, in floorspace, at around 6,400 m2 GFA. It is larger than the two existing Pak ’N Save stores, and its location within Te Rapa lends itself to serving an extensive geographic catchment covering both a large share of Hamilton’s urban area as well as southern parts of the Waikato District.

It is estimated that the proposed store would attract annual sales of around $100 million in the base year. This compares to estimated annual sales of $136 million at the existing Mill Street Pak ’N Save and $93 million at the existing Clarence Street Pak ’N Save stores. It would equate to a floorspace productivity of around $15,700/m2, which is below that of the existing Pak ’N Save stores ($22,800/m2 and $19,900/m2), meaning it is likely to be a conservative estimate of sales.

The retail distributional modelling undertaken by M.E 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), with modelled 29-30% impacts on sales. The largest share of sales at the new store are likely to be drawn away from the Mill Street Pak ’N Save, although the percentage impact on this store is lower (12%) as it has a much larger existing sales base.

Significant impacts are also suggested to occur for the existing supermarkets at Rototuna, Nawton and Chartwell – the surrounding suburban and sub-regional centres. These impacts range from between 14% of sales (Chartwell Countdown and Rototuna Countdown) to 19% of sales (Rototuna New World), with a 15% impact on Nawton Countdown.

The modelled effects on Nawton are of greatest concern. The analysis suggests that Nawton Countdown is already Hamilton City’s smallest supermarket, with estimated annual sales of $19 million. It also has the lowest floorspace productivity, at an estimated $6,700 sales per m2. The modelling results indicate that the proposed store may adversely affect the viability of this supermarket. The results suggest that sales are likely to decrease to $16 million, and floorspace productivity to $5,700/m2. The modelling shows that sales
in Nawton, with the addition of the proposed store, are likely to take at least 8 years to return to their current levels through growth in demand within the catchment. 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.

These findings are notable because the supermarket plays an important role within Nawton centre. Nawton is a suburban centre located centrally within its surrounding residential catchment within the outer suburban area of Hamilton – it is a small suburban centre that anchors its surrounding residential neighbourhood.

The ODP states that “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)”. The Plan states that supermarkets play an important role within the third tier – suburban centres – of the centres hierarchy, typically anchoring other retail within the centre.

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 Nawton32. If this occurred, then we 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.

However, we consider that a scenario with no supermarket operating within Nawton is unlikely to be an outcome delivered by the market. Nawton’s surrounding residential catchment contains approximately 15,400 people, which amounts to 9% of Hamilton’s residential population, thus making it a significantly sized local area with Nawton centre forming the main local retail centre (there is a small amount of retail on Avalon Drive at the edge of the catchment). Other scenarios may therefore be the continued operation of Countdown, albeit at a smaller scale; 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).

Further modelling was conducted to understand how the custom at Nawton Countdown may be redistributed across the remaining supermarket network if it were to close. A key question was whether the Countdown store network would still be likely to continue to serve most of the demand from Nawton Countdown through its adjacent Dinsdale and Te Rapa stores, or whether this trade would be lost as market share to competitors.

The modelling indicated that the closure of Nawton Countdown would result in a loss of market share within this catchment to competitor stores. It suggested that nearly three-quarters of the sales would be captured by the other supermarket brands, almost all by the Pak ‘N Save Mill Street store and the proposed

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32 The potential impacts of a loss of trade from cross-shopping on other retailers within the centre were assessed in M.E’s 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.
Te Rapa store, and a small share by New World. Only a small share (28%) is likely to continue to be served by Countdown, mainly within the Dinsdale store.

Given the modelling results, we consider that it is more likely that a supermarket will remain open within Nawton centre. 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. Alternatively, we consider 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.

The results suggest that Nawton is likely to continue to have a supermarket operating within the suburban centre, albeit at a reduced scale. We 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.

Changes in the spatial distribution of retail can have important impacts on the enablement and efficiency of households. These impacts occur through changes to the travel efficiency of households as they seek to meet their needs across different spatial structures of retail supply. Changes in travel patterns occur as a direct response to spatial redistributions of supply. They occur from both 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 (e.g. store closures). Thus, there is the potential for substantial impacts to household efficiency and enablement to occur even if impacts on retail distribution itself are not sufficiently large to result in the closure of a store (although the effects would be likely to be larger with store closure).

It is important to recognise that travel efficiency also influences the social amenity of households and communities. There are crucial linkages between retail and other activity, particularly through the social infrastructure and wider functions of centres that retail sustains. Travel patterns to retail away from centres thus results in a decrease to the social amenity received by households that is provided within centres. 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 of smaller centres is redistributed as larger functions to the higher order centres.

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.

These impacts are not likely to be experienced homogenously across Hamilton City. Households in the areas immediately surrounding the proposed store would be likely to experience an increase in travel efficiency due to the addition of new supply in their area. However, most other areas are likely to experience decreases in travel efficiency. 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. Overall, the distances travelled by households within these areas immediately surrounding the centres (i.e. within 2 kilometres road network distance) to supermarkets are projected to increase by between 8% and 11%.

Modelling of travel efficiency effects from the closure of Nawton supermarket suggest a further 3.7% increase (total +8.1%) in the overall distance across which Hamilton supermarkets are accessed by Hamilton
households. The effects of this further change would be heavily concentrated into the Nawton catchment, resulting in decreases to the enablement of the community served by this centre.

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 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.

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)”.

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.

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. We consider that the likely outcome of activity within Nawton centre is within the definition of a suburban centre within the Plan.

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

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 normally form an important part of any retail economic assessment. M.E consider that the direction of the effect needs to be considered together with the scale of the effect. M.E 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.
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. We 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, we cannot conclude that the proposed supermarket would undermine the business centres hierarchy.
Appendix 1 – Agreed Points for Economic Assessment

The following is a list of the matters to be included within the CAR (as outlined in the 12 September 2018 email from the applicants’ planner):�

1. “Delineate the core trade catchment of the proposed supermarket.
2. Demographically profile the core market.
3. Quantify population and household growth in the core market.
4. Determine the level of relevant sector (Food Retailing) expenditure generated in the market (Demand) on an annualised basis (current and future).
5. Understand Food Retailing shopping spending patterns in the market through MarketView retail transaction data.
6. Determine the level of retail GFA that can be sustained by the market on an annualised basis.
7. Undertake a retail audit of the surrounding retail centre network to determine their current size (supply), composition and health.
8. Assess current vacancy and capacity within the surrounding centre network.
9. Determine the current market demand/supply differential to determine current market capacity for such a new supermarket.
10. Determine the level of impacts on the surrounding centre network, and specifically the surrounding supermarket network.
11. Assess the above analysis against H2 criteria as set out in the HCC DP.”

Three further points were also agreed during the 11 September 2017 meeting and were added in response to the above list to complete the agreed scope of the CAR. These were identified via an email from M.E and include:

12. “Why PNS is proposing to locate on industrial land adjacent to the centre instead of vacant land within the sub-regional centre. This relates to H2b around avoiding the inefficient use of physical resources and H2d around the availability of suitable land within the business centres.
13. Any impacts from taking up industrial zoned land for non-industrial uses. Tim or Matt are going to contact HCC to see if they can use the NPSUDC analysis on the supply and demand for industrial land.
14. Any effect from expanding the effective area of Te Rapa centre. This mainly relates to H2a and H2e on the potential effects on the City Centre.”

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33 Email from Matt Norwell, director at B&A Urban & Environmental, 2:41pm Tuesday 12 September, to Fraser McNutt (HCC), Tim Heath (PEL), Nick Hanson (Foodstuffs), Doug Fairgray (M.E), Susan Fairgray (M.E), Sam Le Heron (HCC) and Mary Wong (B&A Urban & Environmental).
34 Email from Susan Fairgray, Senior Consultant at M.E, 9:36am Wednesday 13 September 2017, to Matt Norwell (B&A Urban & Environmental), Fraser McNutt (HCC), Tim Heath (PEL), Nick Hanson (Foodstuffs), Doug Fairgray (M.E), Sam Le Heron (HCC) and Mary Wong (B&A Urban & Environmental).
8 Appendix 2 – Technical Assessment of Centres Assessment Report

This Appendix contains our initial technical assessment of the Centres Assessment Report submitted by the applicant.

8.1 Introduction

8.1.1 Context Overview

A resource consent application has been submitted by Foodstuffs North Island Ltd to Hamilton City Council (HCC) 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 6,358m² of gross floor area (GFA) and would occupy a 2ha site.

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, increasing the overall size of the retail hub within the northern part of Hamilton City.

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 within Hamilton’s business centres hierarchy. In accordance with the Hamilton City Operative District Plan (ODP), the applicant has submitted a Centres Assessment Report (CAR)35 to present the economic effects of the proposal.

8.1.2 PEL Conclusions

In summary, the PEL report concludes that there is currently sufficient demand to almost sustain the proposed supermarket already within Te Rapa, and that only a small redirection of spending flows would be required to fully sustain the supermarket now. The main conclusions presented in the PEL report are as follows:

1. Te Rapa can currently sustain 17,900m² GFA of food retailing, of which 12,200m² is supermarket floorspace. This is based on:
   a. A total food retailing demand of $703m annually arising from within Hamilton City.
   b. Additional food retailing demand arising outside Hamilton City, but being met by stores in the City, equating to a further 35% or $249m, taking total food retailing demand to $953 m currently (implied by the calculations in the PEL report).

c. The supermarket share is 75% of total food retailing demand, meaning the total demand for Hamilton supermarkets is $713m.
d. 15% of Hamilton City’s supermarket demand is currently met in Te Rapa, equating to demand for $107m of supermarket retail at this location.
e. Applying a supermarket floorspace productivity of $8,760 per m$^2$ (as calculated from the PEL report) implies that 12,200m$^2$ of supermarket floorspace is currently sustainable at Te Rapa.

2. Te Rapa currently has two existing supermarkets with a combined floorspace of 8,300m$^2$. PEL consider that the Hamilton market can currently sustain an additional 3,900m$^2$ of supermarket floorspace in Te Rapa. PEL conclude that the two existing supermarkets must be performing well, given the estimated food retail demand ($107m) currently met within Te Rapa.

3. If the share of Hamilton City’s total food retailing demand met at Te Rapa were to increase from 15% to 18%, then more supermarket floorspace would be sustainable at Te Rapa - to an implied 14,640m$^2$ from the PEL calculations. This increase in Te Rapa’s market share would mean an additional 6,340m$^2$ of supermarket floorspace could currently be sustained at Te Rapa.

On this basis, PEL consider that the proposed supermarket (6,358m$^2$) can currently be sustained at Te Rapa, assuming that Te Rapa could increase its share of the total Hamilton City supermarket spend to 18% from 15%.

PEL further conclude 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. Key aspects are that:

4. Brand competition between supermarkets has already occurred in Nawton through the Mill Street Pak’n Save, therefore the effect will be small.
5. The City Centre will have a sales impact of 7% for supermarket spend, which will be less than 4% for retail overall. The wider role of the City Centre makes this effect insignificant.
6. Effects at Rototuna centre will not be sufficient to result in the closure of any existing supermarkets.
7. The largest effect will be on Countdown within Te Rapa. However, this is netted out by an overall increase in centre sales where the proposed supermarket will function together with the existing retail and therefore increase overall centre sales.

PEL also contend that the proposed supermarket is unable to locate elsewhere:

8. The remaining land within The Base is already taken up by existing retail resource consents.
9. Other centres do not contain sufficiently large vacant sites and would serve a different market to the core catchment area.

The development of the proposed supermarket will provide customers with better access to a greater range of food retail choices.

The proposed supermarket will not prevent Hamilton City from meeting its’ demand for industrial land given the surplus of industrial land supply (relative to demand) at the city level.
8.1.3  M.E Technical Assessment

M.E have been commissioned by HCC to provide a technical assessment of the CAR for the application, which has been prepared by Property Economics Ltd (PEL). A key issue is to determine whether sufficient information has been provided to understand the likely effects of the proposal on other centres within Hamilton’s centres hierarchy.

M.E, as the intended technical assessors, met with the applicant (Foodstuffs NI Ltd), their planners and their economic consultant (PEL) on 11 September 2017 prior to the PEL economic analysis being undertaken. The intent of the meeting was to clarify the scope of the CAR and to identify the relevant issues to be addressed within the economic assessment. The following is a list of the matters to be included within the PEL CAR (as outlined in the 12 September 2018 email from the applicants’ planner36):

1. “Delineate the core trade catchment of the proposed supermarket.
2. Demographically profile the core market.
3. Quantify population and household growth in the core market.
4. Determine the level of relevant sector (Food Retailing) expenditure generated in the market (Demand) on an annualised basis (current and future).
5. Understand Food Retailing shopping spending patterns in the market through MarketView retail transaction data.
6. Determine the level of retail GFA that can be sustained by the market on an annualised basis.
7. Undertake a retail audit of the surrounding retail centre network to determine their current size (supply), composition and health.
8. Assess current vacancy and capacity within the surrounding centre network.
9. Determine the current market demand/supply differential to determine current market capacity for such a new supermarket.
10. Determine the level of impacts on the surrounding centre network, and specifically the surrounding supermarket network.
11. Assess the above analysis against H2 criteria as set out in the HCC DP.”

Three further points were also agreed during the 11 September 2018 meeting and were added in response to the above list to complete the agreed scope of the CAR. These were identified via an email from M.E37 and include:

12. “Why PNS is proposing to locate on industrial land adjacent to the centre instead of vacant land within the sub-regional centre. This relates to H2b around avoiding the inefficient use of physical resources and H2d around the availability of suitable land within the business centres.
13. Any impacts from taking up industrial zoned land for non-industrial uses. Tim or Matt are going to contact HCC to see if they can use the NPSUDC analysis on the supply and demand for industrial land.

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36 Email from Matt Norwell, director at B&A Urban & Environmental, 2:41pm Tuesday 12 September, to Fraser McNutt (HCC), Tim Heath (PEL), Nick Hanson (Foodstuffs), Doug Fairgray (M.E), Susan Fairgray (M.E), Sam Le Heron (HCC) and Mary Wong (B&A Urban & Environmental).
37 Email from Susan Fairgray, Senior Consultant at M.E, 9:36am Wednesday 13 September 2017, to Matt Norwell (B&A Urban & Environmental), Fraser McNutt (HCC), Tim Heath (PEL), Nick Hanson (Foodstuffs), Doug Fairgray (M.E), Sam Le Heron (HCC) and Mary Wong (B&A Urban & Environmental).
14. Any effect from expanding the effective area of Te Rapa centre. This mainly relates to H2a and H2e on the potential effects on the City Centre.”

8.1.4 Structure of Technical Assessment

The technical assessment is contained in Sections 8.2 and 8.3 of this report and is structured so as to broadly follow the main sections within the PEL report. It provides initial comment on the scope of the PEL report (Section 8.2.1), then assesses the quantitative analysis undertaken within the PEL report (Sections 8.2.2 to 8.2.4). Section 8.2.5 reviews the quantified spending diversion from other centres based on their quantitative assessment. Importantly, it also reviews the PEL interpretation of these findings.

Section 8.3 considers the wider implications of the proposal, including in relation to the objectives and policies of the Plan, effects on other centres, the PEL approach to retail analysis and implications for urban form, the PEL analysis of growth in Te Rapa, and the supply and demand of industrial land in Hamilton City. It also compares the current PEL report with earlier evidence presented by PEL for retail in this location during the Hamilton City District Plan hearings in 2014.

Section 8.4 contains the concluding remarks.

8.2 Technical Assessment of Economic Report

8.2.1 Key Research Objectives

The research objectives listed in the PEL report cover most of the agreed scope listed above in Section 8.1.2. A few of the agreed items are not specifically listed in the PEL report, but are covered as part of the methodology in the analysis undertaken by PEL.

However, the PEL research objectives have not included the matter of the effective expansion of the size of the retail node in Te Rapa (point 13 above in Section 8.1.2). This is a key issue for the resource consent as the proposal would effectively expand the overall retail capacity at Te Rapa, by enabling retail to establish on Industrial Zoned land. The matter of the overall scale of retail activity in this location was given significant consideration during the zoning hearings for the ODP, especially the spatial extent and capacity of the Business 4 – Large Format Retail Zone, in relation to the Industrial Zone. This is important because of the potential effects on the Hamilton City Centre, and long-term intention for the City Centre to be the pre-eminent centre for Hamilton.

8.2.2 Supermarket Potential

The key components of the PEL assessment are identification of the likely core catchment area for the proposed supermarket, the basic household count in that catchment, the projected household growth in that catchment and total Hamilton City, and the available spending power for food and grocery retail, and for supermarkets, again current and projected. The PEL assessment also addresses floorspace sales productivity, to estimate the amount of supermarket floorspace which may be sustained in total, and at Te
Rapa. The spending power estimates, catchment share and floorspace productivity estimates provide the basis for PEL’s conclusions about the level of supermarket floorspace which is currently sustainable at Te Rapa.

The calculation approach used by PEL is straightforward, starting from households and spending power, to projected growth in spending power, to estimated share of spending power which may be attracted to Te Rapa, then applying the estimated sales productivity ($/m²/yr) to that spending power, in order to estimate how much floorspace would be sustainable.

Information Sources

The information sources outlined in the PEL report (on page 7 and others within the sections of analysis) seem reasonable and include the core information commonly used in retail assessments.

Likely Catchment

The PEL report identifies the core catchment of the proposed supermarket. It includes the northern part (approximately 40%) of urban Hamilton City, and extends northwards into the surrounding peri-urban and rural areas of Waikato District to just north of Huntly. It includes the smaller urban settlements of Huntly, Ngaruawahia, and Te Kowhai. The southern edge of the catchment, within urban Hamilton City, is predominantly formed by the likely boundary between the proposed Pak’n Save’s catchment and that of the Mill Street Pak’n Save located on the northern edge of Hamilton’s City Centre.

M.E consider that the catchment area identified by PEL is reasonable and is likely to reflect the main trade area that the proposed supermarket would draw from. The spatial extent of the catchment area is consistent with previous research that M.E have undertaken within Hamilton’s retail sector. It reflects the geographically extensive area from which customers are attracted to the node of retail activity within Hamilton’s Te Rapa area. M.E also consider that the southern boundary of the catchment, as defined by PEL, within Hamilton’s urban area is reasonable given the location of existing Pak’n Save supermarkets within Hamilton City38.

Household Estimate

The number of households contained within the PEL catchment is consistent with M.E’s analysis of the same geographic area within the M.E Hamilton Retail Model. The PEL report estimates 29,450 households are located within the catchment as at 2017, and the M.E estimate is approximately 30,900 households as at 2018.

Population and Household Projections

The PEL report estimates a net increase of 11,250 households across the area from 2017 to 2037, with an annual average growth rate of 1.6%.

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38 While this is the likely primary trade area identified by PEL, we note that this does not necessarily signify that Te Rapa is the most efficient or central location for demand arising across this area. The Te Rapa area itself includes a large industrial area, and limited residential land use, and consumers are attracted to shop there because of concentration of retail activity established following development of The Base. That does not mean that the retail centre is the most efficient location in terms of travel distance.
M.E have analysed the household projections contained within the PEL report in relation to a range of projection series. These include the latest Statistics New Zealand projection series and the household projections that were provided to M.E to use within the housing demand and capacity assessment undertaken for the National Policy Statement on Urban Development Capacity (NPS-UDC) and the M.E Retail Model projection series.

We find that the household growth assumed in the PEL report is broadly consistent with our Retail Model household growth anticipated for the same area (M.E find an estimated net increase of 11,500 households across the same area from 2018 to 2038, with an annual average growth rate of 1.6%).

Overall, these rates of growth are consistent with the latest household projections from Statistics New Zealand at the Territorial Local Authority (TLA) level for Hamilton City and Waikato District.39

It is important to note that the Statistics New Zealand (and therefore PEL) household growth projections are lower than those used for the purposes of HCC’s NPS-UDC housing capacity and demand assessment, which underpins much of the planning analysis for HCC. The growth projections used within the NPS-UDC assessment were specifically supplied to M.E by HCC to use in this assessment. It is our understanding that they have ultimately been formed from demographic population projections provided by NIDEA for the Waikato Region. In comparison, the NPS-UDC projections estimate an additional 15,200 households across the catchment area between 2018 and 2038, with an annual average growth rate of 2.1%.

Distribution of Household Growth

The PEL report does not contain information on how these household growth projections are likely to be distributed spatially within the catchment area. This would be useful information given the large spatial extent of the catchment and the patterns of growth relative to potential locations to meet demand, and the location of existing centres and stores which the proposed store may affect.

The growth analysis undertaken by M.E to assist HCC’s compliance with the NPS-UDC (2016) indicates that the Hamilton City area of the PEL catchment is likely to grow faster than Waikato District, so that just over two-thirds (68%) of the projected increase in household numbers would occur in Hamilton City. The remaining 32% is projected to occur within the Waikato District, where the projected increase is slower.

The PEL report applies a single projection for the catchment, and does not examine the implications of different patterns of household growth — for example, where the northern urban settlements may attract higher shares of total sub-regional growth as a consequence of changes in the transport infrastructure connections around the upper Hamilton/Waikato area.

Retail Expenditure

The description of the PEL Retail Expenditure Model (REM) suggests that it contains the main drivers of retail demand and includes the important distinction between demand that is met within physical stores vs. demand that is met through online spending. There is not sufficient detail to fully analyse every aspect.

39 While the PEL report does not contain Hamilton City level projections, it is consistent with the M.E projections, which also contain TLA level totals. The M.E TLA level totals are consistent with the Statistics New Zealand latest projections.
40 National Institute of Demographic and Economic Analysis.
of the model, however, the PEL report contains sufficient outputs from the model to enable a comparison to M.E’s Retail Model outputs to assess the PEL analysis.

M.E consider PEL’s assumed real increase in retail expenditure of 1% per annum to be appropriate. We also consider PEL’s assumed rate of tourism expenditure growth (long-term rate of 2%) is appropriate (noting that, the long-term rate of tourism expenditure is likely to be significantly below the national level short-term rate of 4.9% per annum).

Layered Retail Catchments

M.E also consider the approach of ‘layered retail catchments’ used by PEL to be appropriate for retail assessment. This approach is important as it recognises that households (and businesses, etc) meet their retail needs across a range of different centres and centre types, and therefore it does not assume that all demand arising within a catchment will be met at the closest centre, and that demand will also arise from beyond the primary trade catchment area.

Retail Scope

The range of retail activities that have been excluded from the retail assessment (as listed on page 14 of the PEL report) is reasonable within the context of this assessment.

Supermarkets’ Share of Food and Grocery Sales

The PEL report defines supermarket expenditure as including ‘Food and Beverage’ expenditure which occurs in stores of 1,000m² GFA or larger, and excludes Food and Beverage expenditure in other stores (especially grocery stores and dairies) of less than 1,000m². PEL estimate that supermarkets (>=1,000m²) attract 75% of all Food and Grocery spend, and that this share applies (by implication) across all catchments. M.E consider this to be a reasonable approximation, for the purposes of the assessment.

Catchment Food and Grocery Spend

PEL provide information on food and grocery and supermarket spending power for the period 2018 to 2038, and estimates of the associated amount of supermarket floorspace which is sustainable.

Using the information available in the PEL report, for the technical assessment we have analysed the PEL retail expenditure figures at both the catchment level and the Hamilton City level. A comparison of the expenditure figures between the PEL report and the M.E Retail Model is provided in Figure 3.

At the city level, the PEL report and M.E Retail Model Supermarket expenditure figures are broadly consistent, within 1% for spend per household and 2% for total spend. It can be inferred from the information in the report that PEL have estimated $528m of supermarket expenditure across Hamilton City overall (in terms of catchment demand) in 2018. This is broadly consistent with the M.E estimate, which is 2% higher at $537m. The difference increases slightly (to 4%) by 2038, with M.E’s model having a slightly faster growth rate. However, the total picture remains broadly consistent.

There are differences between the estimates for spending power across the identified trade catchment (‘PEL Catchment’). The M.E Retail Model estimates total supermarket expenditure to be 14 per cent ($35m) higher than that estimated in the PEL report, and that this would increase to 18% by 2038. This is because the underlying demographic drivers in the M.E Retail Model indicate that average supermarket expenditure
per household is around +3% higher than the Hamilton average, whereas the PEL estimate assumes the average is -6% below the Hamilton average. We note that this appears to be inconsistent with the demographic analysis of the PEL report itself (Section 3, p10 of the PEL report) that suggests that average per household expenditure would be higher within the PEL catchment than the city overall.

Overall, the M.E Retail Model estimates a higher level of supermarket expenditure across the PEL catchment than the PEL report. The expenditure is also projected to grow at a slightly faster rate, in part due to a faster rate at the city level. In 2018, the estimated difference is $35m, increasing to $69m in 2038. This difference in expenditure is expected to flow through into the estimates of the level of floorspace which is sustainable from catchment demand.

Figure 3 – Comparison of Supermarket Retail Expenditure Estimates between the PEL Report and the M.E Retail Model, 2018 and 2038

<table>
<thead>
<tr>
<th>Source</th>
<th>Area</th>
<th>Measure</th>
<th>YEAR</th>
<th>Change 2018-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2018</td>
<td>2038 Net</td>
</tr>
<tr>
<td>PEL Report</td>
<td>Hamilton City</td>
<td>Households (SNZ)</td>
<td>61,500</td>
<td>81,700</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Supermarket Spend ($m)</td>
<td>$ 528</td>
<td>$ 795</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spend per Household</td>
<td>$ 8,592</td>
<td>$ 9,731</td>
</tr>
<tr>
<td></td>
<td>PEL Catchment</td>
<td>Households</td>
<td>29,930</td>
<td>41,364</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Supermarket Spend ($m)</td>
<td>$ 242</td>
<td>$ 374</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spend per Household</td>
<td>$ 8,085</td>
<td>$ 9,042</td>
</tr>
<tr>
<td>M.E Retail Model</td>
<td>Hamilton City</td>
<td>Households</td>
<td>61,400</td>
<td>81,700</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Supermarket Spend ($m)</td>
<td>$ 537</td>
<td>$ 824</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spend per Household</td>
<td>$ 8,700</td>
<td>$ 10,100</td>
</tr>
<tr>
<td></td>
<td>PEL Catchment</td>
<td>Total Supermarket Spend ($m)</td>
<td>$ 277</td>
<td>$ 443</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spend per Household</td>
<td>$ 9,000</td>
<td>$ 10,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.E Retail Model</td>
<td>Hamilton City</td>
<td>Households</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Supermarket Spend ($m)</td>
<td>102%</td>
<td>104%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spend per Household</td>
<td>101%</td>
<td>104%</td>
</tr>
<tr>
<td></td>
<td>PEL Catchment</td>
<td>Households</td>
<td>103%</td>
<td>103%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Supermarket Spend ($m)</td>
<td>114%</td>
<td>118%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spend per Household</td>
<td>111%</td>
<td>115%</td>
</tr>
</tbody>
</table>

8.2.3 Sustainable Floorspace (GFA)

The floorspace productivity used in retail analysis is an important figure because that translates estimates of overall retail expenditure demands into sustainable floorspace. It shows the amount of floorspace required / able to meet the level of retail demand in a location and is typically expressed in terms of sales dollars per m² of GFA, per year. The higher the productivity (i.e. the greater the value of sales per m²) the smaller the floorspace area required to support the demand, and vice versa.

Floorspace Growth

The figures presented in the PEL report (Table 1 and Table 2) show that floorspace productivity for supermarket sales has been calculated at a rate of $8,760 per m² per annum. PEL have used this to then calculate that 27,700m² of supermarket floorspace can currently be sustained by the core catchment area, and that this would increase to 42,700m² by 2038 – a net increase of 15,000m², of +54% (Table 1).
At the total Hamilton City level, the projected demand growth implies an increase of 30,300m² GFA of sustainable supermarket floorspace over the period 2018 to 2038. The sustainable supermarket floorspace in Hamilton City would increase by 41,300m² GFA if additional demand from the towns, rural and peri-urban areas around Hamilton is included. This is implied but not stated in the PEL report.

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.

To illustrate this increase in floorspace in terms of supermarkets “on the ground”, the PEL report implies that demand growth within the Hamilton market could support another 7 Pak’n Save supermarkets (of the same scale 6,358m² as that proposed) over the next 20 years. This compares to the existing 14 supermarkets within Hamilton City.

**Sales Productivity**

The PEL sales productivity estimate is $8,760 per m² for supermarkets (implied from Tables 1 and 2). This sales productivity is assumed to remain unchanged over the 2018 to 2038 period.

M.E consider that a rate of $8,760 per m² is significantly too low. Our experience in the supermarket sector suggests that floorspace productivity for urban supermarkets typically falls within a range of $11,000 to $18,000 per m², and higher productivities in higher value, busier locations. We 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 our information on total Hamilton supermarket floorspace and estimated supermarket spend, we estimate supermarket floorspace productivity to be around at least $11,000 to $13,000 per m² overall (where the figure will be greater if a net surplus of spending from outside of the city is included in the calculation).

It is unclear why a floorspace productivity of $8,760 per m² has been selected within the PEL report analysis. It is not consistent with the calculations contained within the PEL report itself, which suggests that total Hamilton City supermarket sales are currently around $713m annually. The floorspace of the supermarkets of over 1,000m² GFA in Hamilton City (which concords with the map of supermarkets – Figure 1 of the PEL report) is estimated at around 51,000m². On this basis, the PEL report estimate of $713m of sales would represent floorspace productivity of around $14,000 per m². If the $8,760 per m² floorspace productivity figure is accurate, then that would imply that the Hamilton market would currently be able to sustain a further 31,000 m² 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 Saves or equivalent supermarkets could be sustained in Hamilton City by 2038.

No further information has been included within the PEL report 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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41 This is based on applying the formula in footnote 5 of the PEL report to the figures contained in Table 2 of the PEL report to identify the total spend at supermarkets across Hamilton.
Future Sales Productivity

The PEL report and analysis assumes that there will be no change in floorspace productivity through time.

Our experience in the sector is that the 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. M.E 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.

Overall, at the Hamilton City level, if M.E’s calculations of supermarket spend (higher than PEL’s) are applied (though still adopting the PEL assumption that an additional 35% of spend is drawn from surrounding areas42), but allowing for floorspace productivity to increase through time at a rate of 0.5% pa, then there would be an estimated increase of 21,700m² of supermarket floorspace at the city level out to 2038.

This is around half of the estimated increase of 41,300m² which is implied by the PEL report.

8.2.4 Te Rapa Supermarkets

PEL have applied the same approach to identify the area of sustainable supermarket space at Te Rapa (Table 1).

The PEL report states that Te Rapa currently attracts 15% of the supermarket food retailing sales in Hamilton City. On this basis, the PEL report has estimated that Te Rapa can sustain 15% of the total Hamilton City growth in supermarket floorspace out to 2038, that is, at a constant market share.

Based on the same level of sales productivity ($8,760 per m²/yr), it estimates that Te Rapa can currently sustain a total of 12,200m² GFA of supermarket floorspace (Table 2, and p21). This is 3,900m² more than the existing 8,300m² of supermarket floorspace. As such, the PEL report concludes that the market can already sustain an additional 3,900 m² of supermarket space (p21), which it considers “is slightly below the proposed 6,000 sqm GFA Pak’N Save Te Rapa store” (p21).

The report then estimates the potential additional sales share for Te Rapa if the proposed store were in place. PEL assume the Te Rapa share would increase by 20% - that is, from 15% to 18%, where 3% / 15% = 20% - and the additional sales would sustain an extra 2,400 m² of supermarket space.

M.E generally agree that the addition of more supermarket space is likely to increase Te Rapa’s share of total Hamilton City supermarket spend.

However, the basis on which the Te Rapa share would increase by as much as one-fifth is not clear in the PEL report.

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42 We note that the PEL report 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 PEL report are based on the former, and therefore have also been applied in this way within our estimate given the stated source from Marketview data. Our calculation is therefore also reliant on the accuracy of this assumption.
Nor is that assumption entirely consistent with what is shown elsewhere in the PEL report. PEL shows that a large part of the Te Rapa catchment (over one-third by M.E’s estimates) occurs outside of Hamilton City, with the catchment map showing the centre serves a geographically expansive area to the north of Hamilton. It is not clear therefore why an alternative approach of calculating sales as a percentage of total Hamilton City demand has instead been applied here.

M.E consider that it is more relevant to firstly identify the level of demand generated within the catchment area likely to be served by the proposed supermarket. By applying M.E’s supermarket expenditure figures, household growth and supermarket floorspace productivity (of $13,000 per m2 in 2018), it is estimated that the catchment area can currently sustain 21,300m2 of retail floorspace. This will be met across a range of different supermarkets, including those within Te Rapa. This is projected to increase to 30,800m2 by 2038 – a net increase of 9,500m2. It is important to note that only a share of this demand is likely to be met within Te Rapa as households within the catchment meet their needs across a range of different centres and centre types.

There is no assessment of alternative locations for a new store, nor whether the proposed location is appropriate in relation to household growth patterns within Hamilton City and surrounding areas.

In our view, the proposed location relative to market growth is an important consideration within the Te Rapa context given that the area is located within an industrial area and may not represent an efficient location in terms of the overall network of supermarkets in relation to the distribution of the market. While the analysis shows that over the next 20 years, the level of demand growth within the catchment area exceeds the proposed size of the supermarket (overall), it does not consider alternative locations where this demand could be met, especially in regard to medium scale supermarkets serving new growth areas in Hamilton.

### 8.2.5 Supermarket Spending Diversion

The PEL report uses the above analysis to estimate the impact on other centres. The PEL 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 PEL report goes on to interpret these changes in spending flows in relation to their likely impacts on the viability and vitality of the centres.

The new supermarket sales have been estimated by PEL to be $60m annually, which equates to a floorspace productivity of $9,500 per m2. As outlined earlier, M.E consider that the floorspace productivity is likely to be higher, at around $13,000m2. Higher productivity would mean higher sales than estimated, and this would have flow-on impacts in relation to the level of sales diverted away from existing supermarkets.

The PEL report does not provide details of the calculations used to determine the percentage impacts on other centres, and M.E have not been able to review their accuracy.

In similar vein, we consider that the PEL 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 PEL 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 m² productivity level assumed by PEL, the market would sustain an additional 42,000 m² 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 m², 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.

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 m² compared with some 51,000 m² 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**

The PEL report 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 PEL report 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.

M.E 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. M.E 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.

M.E generally agree that the proposed supermarket is likely to function together with existing retail in and around The Base. The PEL report 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. PEL state 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.

M.E 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.
8.3 Wider Implications

8.3.1 Potential to Affect the Central City

More important, the effects on other supermarkets represent only part of the picture. Those effects do not address the wider issues arising from the potential expansion of the Te Rapa retail node, and the implications for the Hamilton Central City. The sales impacts on Countdown and other supermarkets and centres represent only part of the overall picture.

A key matter is that the proposed supermarket would be located on Industrial Zoned land which falls outside of the centre.

M.E consider that the size of the effect on the City Centre supermarket sales does not provide an adequate basis for disregarding the effects on the City Centre. As well as the low sales estimates for the Pak’n Save indicating that effects on the central city supermarkets are understated, there are two core reasons for this:

i. The direction of the effect is more relevant than the scale of the effect in understanding the implications for urban form. The basis for this is outlined further in Section 8.3.4.

ii. The effects on the City Centre are not limited to the addition of the proposed supermarket in Te Rapa. This is explained further below.

Establishing the proposed supermarket in the Industrial Zone would effectively expand the size of the Te Rapa retail node, centred on The Base Sub-Regional Centre.

This is acknowledged in the PEL report which states “the Pak’N Save site would represent an expansion of the existing business zones as cumulatively they would in effect work as part of a single consolidated retail destination (p31)”. By locating adjacent to, but outside, The Base, the proposed supermarket location in effect will free up an equivalent area (2 ha) within The Base which may be then developed for other retail.

The PEL report recognises this, noting that there is a large amount of additional consented floorspace within The Base (pp29-30: 47,000m² GFA, of which 18,000m² is for retail activity). That potential development covers the remainder of the area where the supermarket might otherwise locate, within the zoned opportunity.

This effective expansion of the capacity of The Base is a core issue. As such, it was identified prior to the commencement of the analysis (point 13 in Section 8.1.2). The establishment of Te Rapa as a major retail node — and acknowledged by the Business 3 and Business 4 zonings — there has had a directly adverse effect on the vitality of Hamilton’s City Centre over the last decade, and this is specifically recognised as an issue in the Plan.

The implication is that further expansion to the size of the Te Rapa retail node (which includes but is not limited to The Base) by whatever route is therefore likely to be further contrary to the objectives and policies of the Plan that aim to maintain and re-establish the primacy of the City Centre.
We note that PEL do acknowledge that the proposed supermarket represents an expansion of the Sub-Regional Centre. However, the wider implications of this have not been fully addressed in the PEL report.

### 8.3.2 District Plan Hearings

These matters are not new.

The hearings for the District Plan considered this issue when examining the spatial extent of the Business 4 Large Format Retail Zone around part of The Base. A key concern was that the greater the retail capacity enabled at Te Rapa, then the greater the potential for adverse effects on the City centre.

Mr Heath (the author of the PEL report in this application) appeared as an expert witness for Hamilton City Council to inform the appropriate scale of this zone. Mr Heath found that a smaller Business 4 – Large Format Retail area than that which was identified in the notified version of the Plan, would be sufficient to accommodate large format retail growth. That smaller area of Business 4 land (as supported by Mr Heath) has since been applied in the operative plan.

It is not clear however, which growth assumptions were used in Mr Heath’s evidence in 2014, so it cannot be compared directly to this assessment. He stated that:

“Part of Hamilton Central City’s recovery and redevelopment is to target LFR tenancies to enable a broader scope of activity to draw shoppers to the city centre, and utilise these ‘anchor’ attractors as leverage to attract smaller Specialty retail tenancies / brands to improve the composition, offer, quality, environment and shopper experience in the Central City. Any rezoning that undermines this sought ‘outcome’ is a step in the wrong direction in my view which dilutes and delays the recovery process, and would conflict with the PDP’s stated objectives (para 25, EIC).”

As part of this assessment, Mr Heath specifically assessed the site of the proposed supermarket, referred to in his evidence as “the Porter site”. The site was originally zoned as Business 4 – Large Format Retail in the notified version of the Plan, but was changed to Industrial Zone as the extent of the Business 4 Zone was reduced around The Base. On the proposed supermarket’s location, Mr Heath concluded in his evidence:

“Overall, rezoning any of the subject Porter site B4 appears unwarranted over the life of the PDP, and over the assessed period thereafter, and would in my professional opinion provide no net benefits to the social and economic wellbeing to the Hamilton community. Development of the

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subject Porter site for LFR activity over the assessed term would only serve to potentially delay the development of the existing zoned provision in Te Rapa (and the CBD), and not generate new demand that otherwise would not exist, i.e. it would represent a reallocation of resources (para 36, EIC).”

“Given this analysis, I recommend LFR in Te Rapa North be restricted to within The Base sub-regional centre, the developed LFR sites and the Countdown and Kmart sites only as per the Proposed Addendum map in Appendix 3. The other remaining vacant blocks are not considered required to be rezoned for LFR development in the foreseeable future (para 37, EIC).”

Mr Heath’s viewpoint about the extent of additional large format retail locating around The Base was detailed in his evidence.

That evidence is not referred to in the PEL report, and the differences between that earlier viewpoint and that in the PEL report now supporting a supermarket application on the same site has not been explained.

8.3.3 Other Centres

The PEL report also quantifies the effect on existing supermarkets in Rototuna and Nawton. It finds that it would cause a decrease in supermarket sales of 10.5% in Rototuna, and a smaller impact (7%) in Nawton. The impact is smaller in Nawton given that most of the supermarket brand competitive effect has already occurred within this catchment given the location of the Mill Street Pak’n Save. The PEL report concludes that the sales impacts on these supermarkets in other centres are insufficient to result in their closure and therefore, will not undermine the viability of these centres.

This approach is similar to that taken above for the City Centre where the PEL report focuses entirely on the scale of the effect and do not consider the direction of the effect. It is M.E’s view that the direction of the effect is of greater importance. This has been similarly reaffirmed by the High Court in the Stirling vs. Christchurch City Council 2011 retail centre judgement. We address this in the following section.

8.3.4 Assessment of the Objectives and Policies of the Plan

The PEL report uses the scale of the effects within the retail distributional analysis to consider the alignment of the proposed supermarket with the objectives and policies of the Plan. In summary, the PEL report finds that the scale of the effects are not sufficient to result in the closure of any existing supermarkets, and will therefore, not adversely affect other centres within the business hierarchy. From this, it concludes that the proposal is not inconsistent with the Plan.

8.3.5 M.E Assessment

A major strategic objective of the Plan is to re-establish the primacy of Hamilton City Centre. The Plan identifies the important role the City Centre plays in the overall functioning of the city, serving the city and wider region. It recognises the important linkages between retail activity and its supporting role for other social and economic activity that occur within the City Centre.

Policy 2.2.4ai describes the Central City as “the primary business centre, serving the City and wider region, and is the preferred location for commercial, civic and social activities.” Concurrently, Policy 2.2.4b states that “the distribution, type, scale and intensity of activities outside the Central City does not undermine
the viability, vitality and vibrancy of the Central City, its amenity values, or role in meeting the needs of the region”.

Hamilton City has experienced substantial change to its spatial economic structure whereby the relative role of the City Centre has significantly declined. This has corresponded with large retail development in Te Rapa, re-shaping the hierarchy of major urban centre nodes within Hamilton. In addition to development within The Base, a substantial amount of further large format retail development has also occurred within the surrounding area thereby increasing the size of this retail node and undermining the City Centre.

The proposed supermarket is located within the Industrial Zone adjacent to The Base. As acknowledged within the PEL report, it is likely to function together with other retail at this location and effectively expand the overall size of this retail node. It is likely to contribute to the growth of retail activity (beyond that enabled by the Plan) that has been occurring around this location. This development trajectory has occurred largely around The Base, effectively representing an expansion of this retail node, which has been central in undermining the role of the Central City.

M.E consider it relevant and useful to take account of the evidence on the appropriate extent of the Business 4 – Large Format Retail Zone, that was submitted by Mr Heath as part of the District Plan hearings, when assessing this application in relation to the objectives and policies of the Plan. In particular, it is important to consider the effect of the extent of this zone (and therefore additional retail growth around The Base) on achieving the objectives and policies of the Plan to re-establish the primacy of the City Centre.

8.3.6 Urban Form Issues and Marginal Retail Assessment

The PEL report takes a marginal approach to the assessment of effects of the proposed supermarket in that it equates its effects with the individual incremental impact (i.e. scale of the effect) it will have on other centres. M.E consider that it is more 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 almost impossible 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.

To further expand on this, it is useful to consider the consequences on urban form of following the approach to assessment of individual proposal effects on a marginal basis as relied on by the PEL report. Almost every individual retail consent will have effects that are insignificant individually. This is because urban form develops incrementally and cumulatively through time through the gradual aggregation of many land use decisions. It is clear that, in aggregate, patterns of development can emerge, such as the dispersal of retail, that can undermine a centres-based urban form. This is indeed the case for Hamilton, which forms a key driver for the Plan’s objectives to re-establish the primacy of the City Centre. It is also clear that individual contributions typically produce insignificant quantitative effects when considered in isolation. Therefore, if the effect of each proposal on the city’s retail form is considered only in relation to the scale of its individual effects, then it would be very difficult to ever deny a consent on this basis. Consequently, if only the scale of effects are considered in the assessment of effects, it would be very difficult to ever achieve the objectives and policies of the Plan.
It is therefore relevant to consider the direction of the effect of each proposal together with the scale of the effect. This is addressed further in the following section.

The High Court decision (and previous Environment Court cases) between Stirling and Christchurch City Council in 2011 provides useful guidance on this matter. The Environment Court judgement states:

“[130] Because of that we accept the evidence of Dr Fairgray that if the evaluation is limited to the adverse effects of a single application then a centres-based approach towards retail distribution is unlikely to be achieved. Therefore the objectives for Christchurch City as set out in its Plan should be approached by considering the extent to which a proposal is directed to achieving them. This will involve more than simply considering whether an individual proposal produces adverse effects. That is not to say that the absence of these effects are irrelevant, as they are relevant both in terms of section 104(1)(a), and also policy 12.1.4. Rather, the absence of these effects is not determinative of an appeal of this kind.”

This judgement was upheld by the High Court.

8.3.7 Industrial Zone Policies and Objectives

The PEL report has limited its’ assessment to Rule 9.5.4 ‘New Supermarkets in the Industrial Zone’. This rule focuses on the effects on centres within Hamilton’s centres hierarchy. M.E considers that further objectives and policies within the Industrial Zone chapter of the Plan are also relevant to the assessment, particularly given the identified medium-term shortage of industrial land within Hamilton’s northern area (see Section 8.3.9).

Specifically, M.E consider that the following Industrial Zone objectives and associated policies may be relevant:

i. "Objective 9.2.1 Industrial activities are able to establish and operate within the zone in an efficient and effective manner.
   a. Policy 9.2.1a Industrial land is used for industrial activities.

ii. Objective 9.2.2 Non-industrial activities which establish and operate within the zone do not undermine the primacy, function, vitality and amenity of the Central City, the sub-regional centres and the function of the lower order centres in the business hierarchy.
   a. Policy 9.2.2a Non-industrial activities do not adversely affect industrial activities in the Industrial Zone, or impact adversely on the strategic role of the Central City as the primary office, retail and entertainment centre, and the other business centres in the City.
   b. Policy 9.2.2b In limited circumstances, new supermarkets may establish in the Industrial Zone where it can be demonstrated that:
      i. suitable land is not available within the business centres; and
      ii. the potential adverse effects on the primacy, function, vitality, and amenity of the centres within the business hierarchy are avoided."

The technical assessment acknowledges that the PEL report has aimed to assess the matters contained in Policy 9.2.2b under Rule 9.5.4. However, we consider that the PEL report has assumed that The Base Sub-Regional Centre is the only alternative for the supermarket location. This is predicated on the assumption
that the trade area of The Base forms a natural catchment for the area and does not consider the potential for households located within this trade area to fall within other catchments (current and potential future).

### 8.3.8 Trends over Time in Te Rapa

The PEL report analyses the change in employment and businesses in Te Rapa through time. This is useful contextual information and shows the formation of this large retail activity node in the northern part of Hamilton City through time.

The analysis within the PEL report is limited to displaying growth within the Te Rapa Census Area Unit (CAU). It does not include any analysis that shows the changes to the overall spatial structure of retail in Hamilton City through time. This is a key issue as it shows the effect of the growth of this major retail node in Hamilton City. The same data (i.e. Statistics New Zealand Business Demographic dataset) shows a corresponding decline in the relative role of Hamilton City Centre’s retail sector through time.

### 8.3.9 Hamilton City Industrial Zoned Land

The PEL report has used the Business Land Capacity and Demand assessment undertaken by M.E for HCC (for the NPS-UDC) to evaluate the effect of the proposal on the take-up of industrial land. It has compared the vacant industrial land within the report to the demand for industrial land over the long-term. The comparison has been conducted at the city level, as well as across the Future Proof Partner area (Hamilton City, Waipa District and Waikato District combined).

The PEL report concludes that the proposal is unlikely to have any adverse impact on the City’s ability to accommodate future industrial growth. It has formed this view on the basis that there is 697ha of vacant industrial land within Hamilton City (and 1,190 across the Future Proof Area), which is less than the long-term demand for 524ha of industrial zoned land (or 880ha across the Future Proof Area).

M.E consider that more detailed analysis of the industrial land supply and demand would be useful, in particular by geographic area. While the supply exceeds demand at the city level, there are significant shortages that emerge in the medium to long-term by location across the city. While it is not necessary to undertake this comparison at the full spatial disaggregation contained within the NPS-UDC (i.e. 20 areas), it is useful to consider supply and demand across the three main regions of industrial land across Hamilton – i.e. the areas in the north (NPS-UDC report areas 1-4 and 15-17), to the central/western side of Hamilton (NPS-UDC report areas 5-8 and 18-20) and to the south/eastern side of Hamilton (NPS-UDC report areas 9-14).

At this level, the analysis shows that significant shortfalls of industrial land begin to emerge in the northern and central/western parts of Hamilton City in the medium to long-term. It shows that in the medium-term, there is a projected shortage of 46ha of land within the northern area of Hamilton, which is projected to decrease to 11ha in the long-term. The shortfall is projected to decrease in the long-term as additional infrastructure is planned in the northern area into the long-term, increasing the industrial land supply. If an additional margin is applied to demand (as per the NPS-UDC assessment requirements), then the shortfall increases to 96ha of land in the medium-term, and 65ha in the long-term.
8.4 Concluding Remarks

8.4.1 Scope

M.E have undertaken a detailed technical assessment of the economic assessment undertaken by PEL for the proposed Pak’n Save supermarket in Te Rapa.

This technical assessment has covered the quantitative assessment contained within the PEL report, considered the impact assessment, and examined the PEL reports scope and findings against the objectives and policies of the Plan. M.E have compared the information contained within the PEL quantitative assessment with our own Hamilton Retail Model, and other economic assessment undertaken for HCC for the NPS-UDC.

8.4.2 PEL Quantitative Assessment

The technical assessment has identified several aspects of the PEL quantitative analysis that may require further assessment or explanation. In general, we consider that the establishment of the main trading area of the proposed supermarket is likely to be appropriate given our understanding of the spatial functioning of Hamilton’s retail sector, including the concentration of retail within Te Rapa. We also find that the approach to calculating supermarket spending demand from within the catchment is broadly appropriate, although there are some differences in our estimates as outlined in the technical assessment.

The main differences with the quantitative analysis between the M.E and PEL approaches occur in relation to the calculation of sustainable floorspace. M.E consider that the sustainable supermarket floorspace growth at the Hamilton City level over the next 20 years is approximately half of that projected by the PEL report. The technical assessment has identified a number of quantitative inconsistencies within the PEL report itself and between the PEL report and our understanding of the retail markets of Hamilton and supermarkets generally. These are outlined in detail within the technical assessment.

The technical assessment considers that the PEL report has not addressed the effects of the expansion of the node of retail activity around Te Rapa on Hamilton’s urban form (as agreed in the initial meeting prior to PEL undertaking the analysis). The PEL report acknowledges this expansion stating that the proposed supermarket will function together with other retail in Te Rapa. It would be useful to understand the extent to which this increases the size of retail within the area, and how this will align with the Plan’s policies and objectives to re-establish the primacy of the City Centre.

8.4.3 Hamilton District Plan

In relation to the retail node expansion, the technical assessment notes too the inconsistencies of the PEL report with earlier evidence during the District Plan hearings relating to the same site. During the hearings PEL considered the revised scale of the Business 4 – Large Format Retail Zone was sufficient to accommodate future large format retail growth and that any further provision of this zone may further undermine Hamilton’s urban form and be contrary to the objectives to re-establish the primacy of the City Centre. The 2014 PEL evidence specifically stated that the proposal’s site should remain as Industrial Zone. The subsequent difference in viewpoint expressed in the 2018 PEL report has not been explained.
An important difference between M.E and PEL also occurs in the interpretation of the findings of the quantitative assessment and what these may mean for the potential effects of the proposed supermarket on Hamilton’s urban form. Specifically, the PEL report concludes that any redirection of spending flows to the proposed supermarket away from existing supermarkets will be insufficient to result in any supermarket closures or significantly affect the viability of existing centres. Conversely, M.E consider that the direction of any effect is a more relevant consideration. This is because urban form develops incrementally and cumulatively through time, with patterns of land use and urban form developing gradually and becoming significant through the aggregation of many land use decisions. It is very unlikely that any individual land use decision will be sufficiently large to by itself generate significant effects individually, yet will have a significant effect on urban form together with other land use decisions through time. As such, retail assessment only at the margin will therefore make it impossible to achieve the centres-based objectives of the Plan in re-establishing the primacy of the City Centre.

We consider that the PEL report has assumed that The Base Sub-Regional Centre is the only alternative for the supermarket location. This is predicated on the assumption that the trade area of The Base forms a natural catchment for the area and does not consider the potential for households located within this trade area to fall within other catchments (current and potential future).

The PEL report has concluded that the proposed supermarket would not impede Hamilton City’s ability to accommodate industrial land demand into the future. This is on the basis of a surplus of industrial land relative to demand when compared at the city level. M.E consider that it is more appropriate to make a comparison at a sub-city level. Using this approach, the technical assessment has shown that a shortage of industrial land has been projected to occur in the northern part of Hamilton in the medium-term. The technical assessment finds that there are other relevant objectives and policies of the Plan, as listed earlier, that need to be considered in relation to the Industrial Zone.