



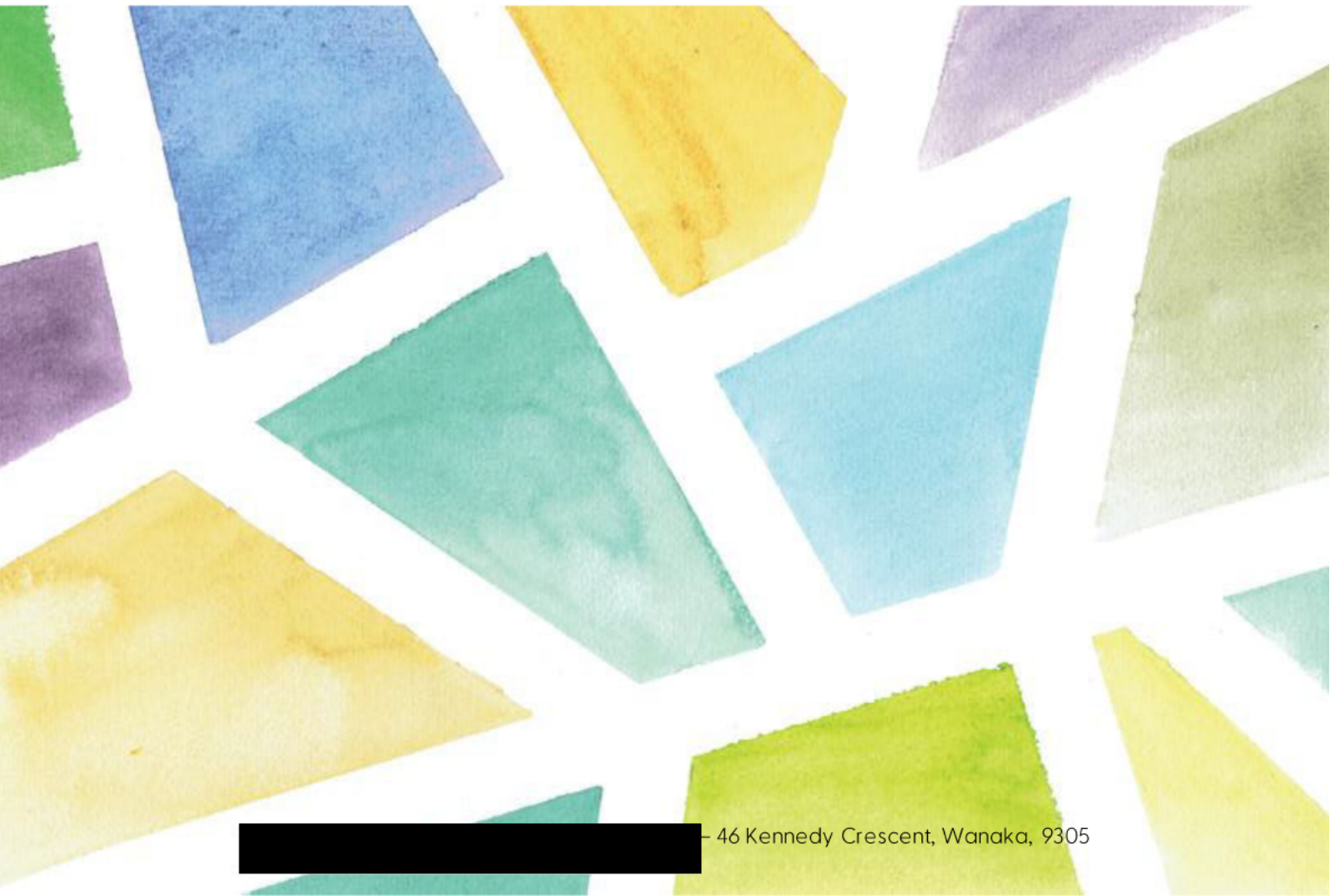
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CONSULTING

Assessment of Economic Costs

Proposed Ōhoka Residential Subdivision

Prepared for: Carter Group Limited

June 2026 – Final



Assessment of Economic Costs

Proposed Ōhoka Residential Subdivision

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Executive Summary

This report provides a robust, desk-top assessment of the two key economic costs of the proposed Ōhoka Residential Subdivision: potential adverse distributional effects on existing centres arising from the commercial centre, and the loss of productive land and primary production activity; as well as discussion of other potential economic disbenefits.

Using a food, grocery and liquor retail gravity model that calibrates demand and supply across Greater Christchurch,¹ Savvy has developed a number of demand growth and supply scenarios to estimate the potential future effects of the proposed commercial centre on the Waimakariri District centre network. Those scenarios consider a lower and upper dwelling yield for the residential subdivision and a corresponding lower and upper supply of food, grocery and liquor employment in the proposed centre that was deemed reasonable for a local centre providing for day-to-day shopping needs in Ōhoka. While development of the centre may be staged in practice, the modelling tests an early and full development scenario to help test a strong competitive effect (shock) on the centre network.

The gravity model showed that no existing centre, including the nearby Mandeville centre, would suffer more than minor adverse effects on centre amenity, vitality and vibrancy based on the food, grocery and liquor store supply assumptions modelled. As food, grocery and liquor sector effects are a good indicator of how other convenience retail and service activities may impact the centre network, Savvy concludes that the distributional effects of a new centre (that is likely to combine a range of other convenience retail and service activities and other commercial, community and health activities) would not lead to any significant adverse effects on other centres in Waimakariri District. Distributional effects on the nearest centre (Mandeville) are considered minor and recoverable over time.

The proposed Ōhoka Residential Subdivision project will result in the permanent loss of LUC 2 and 3 land in Waimakariri District, but Savvy's analysis has shown that this loss is negligible when measured against the total LUC 1-3 land that exists in the district. The site is used for land based primary production at present (a mix of dairying and cattle breeding). Having estimated the gross output of this status quo farming operation and the total direct and flow-on value added and employment contribution of that activity, Savvy considers that the loss of this economic activity on the regional economy (even over the long term) would be negligible.

Overall, the actual and potential economic costs/disbenefits of the proposed development are considered to range from less than minor to minor at the district and regional level.

¹ Developed and made available by Market Economics Limited.



1 Introduction

This report has been prepared by Savvy Consulting Limited (Savvy) to assess the actual and potential economic costs (adverse economic effects) of a request to develop approximately 154.4ha of rural land in Ōhoka, Waimakariri District for urban residential, recreational and commercial purposes. This report is intended to contribute to the bundle of independent technical reports supporting the Carter Group's 'Ōhoka Residential Subdivision' substantive Fast Track consent application.

The author of this report is Natalie Hampson (Director of Savvy). While this report has been written with reference to "Savvy's" views and expertise, they are wholly the views and expertise of the author (unless otherwise stated). A CV setting out the qualifications and experience of the Natalie Hampson is contained in Appendix A.

Code of conduct

I (Natalie Hampson) have approached this assessment on the basis that it is prepared in the same way as it would be for expert evidence in Environment Court proceedings.

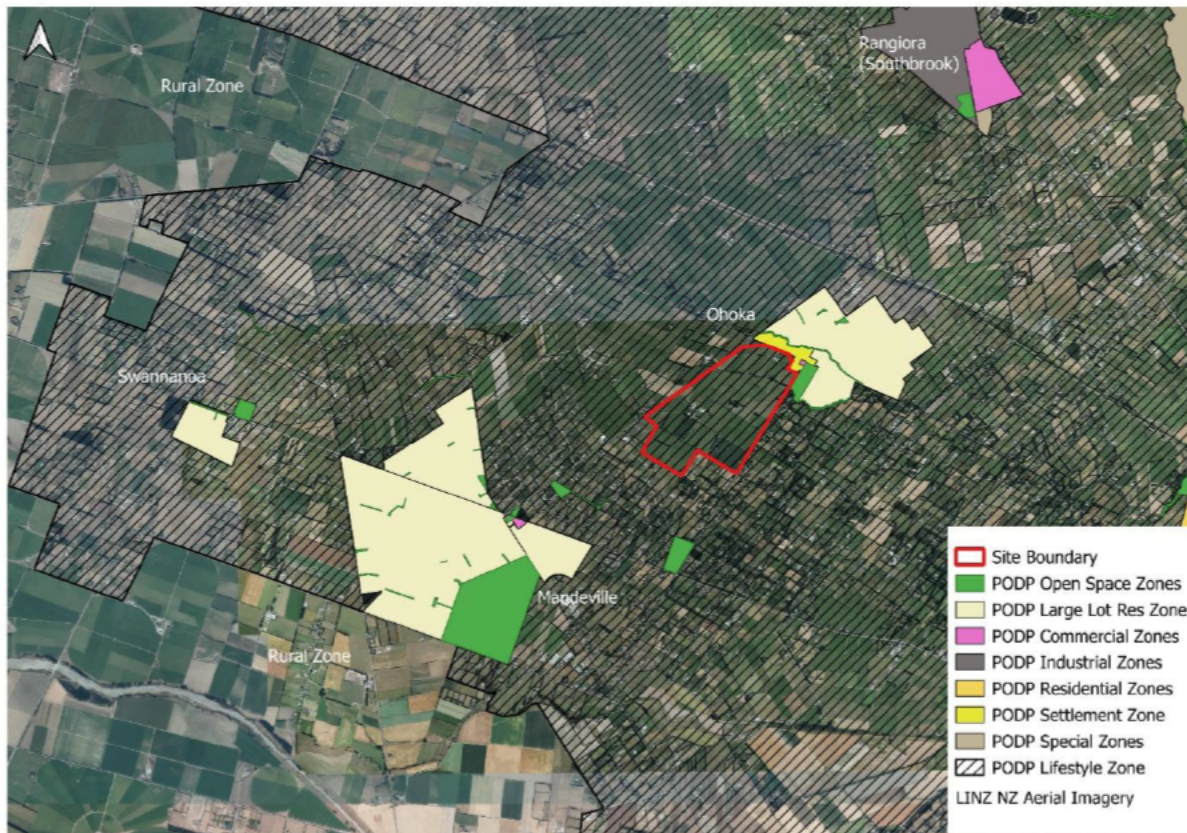
I therefore confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and confirm that I have complied with it in preparing this assessment. I confirm that the issues addressed in this assessment are within my area of expertise, except where I have indicated that I am relying on others' opinions. I have not omitted material facts known to me that might alter or detract from my opinions expressed.

1.1 The Proposal

The proposed development is described in detail elsewhere in the application documentation. Briefly though, the site adjoins the existing Ōhoka settlement which currently comprises a mix of Settlement Zone, Large Lot Residential Zone and Neighbourhood Centre Zone land in the partially operative Waimakariri District Plan (PODP) (Figure 1.1).



Figure 1.1 – Ōhoka Residential Subdivision Site in Relation to PODP Zoning in Ōhoka

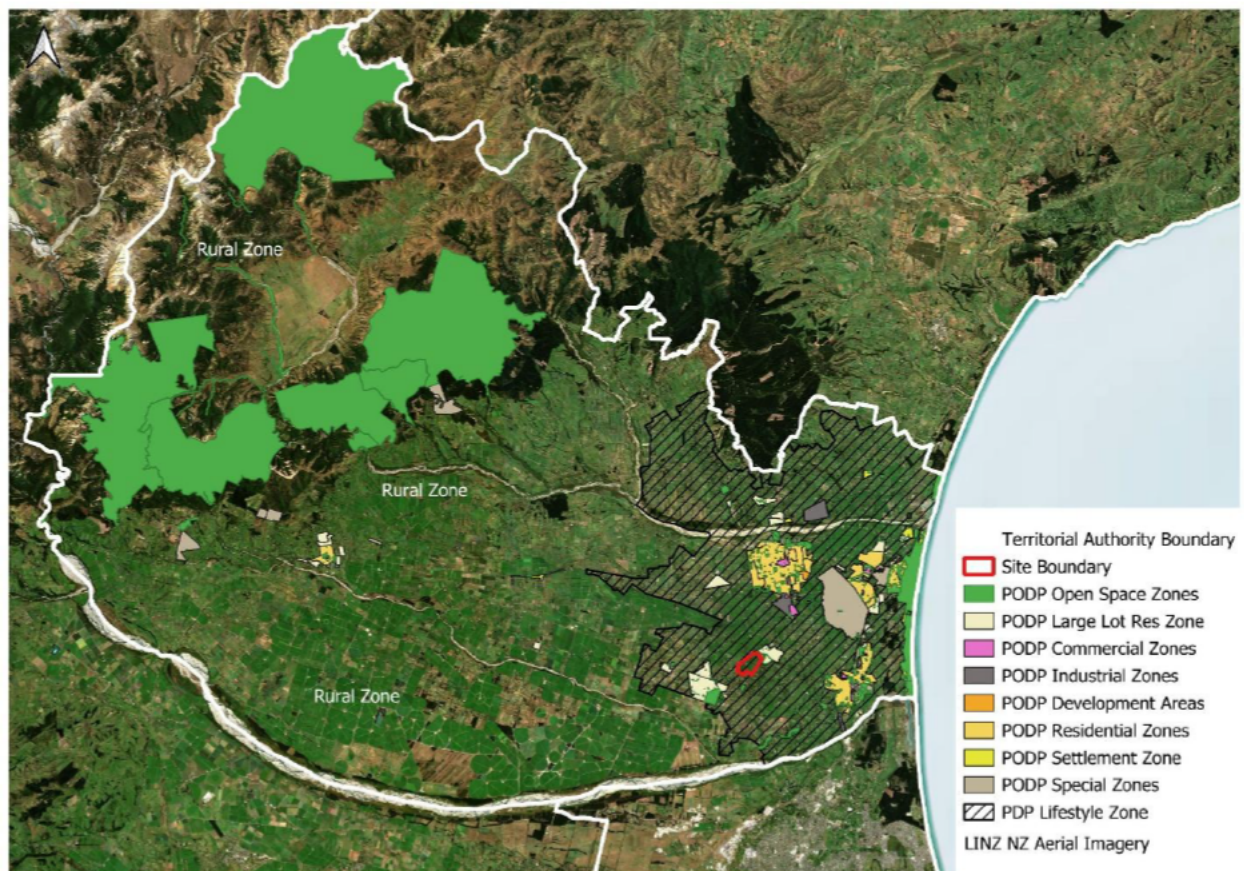


The proposal would provide for contiguous expansion of the settlement to the south-west. The Site is, for the most part, bounded by Whites, Mill and Bradleys Road. The north-east boundary of the site also adjoins (on the opposite side of Whites Road) the Ōhoka Domain.

Figure 1.2 places Ōhoka in the wider context of the district. The majority of urban (including large lot residential) land exists in the east of the district and south of the Ashley River. This is also the area within the Greater Christchurch Urban Environment. The Rural Lifestyle Zone in the PODP is also limited to the east of the district, surrounding the various townships and settlements. The Greater Christchurch Urban Environment portion of the district is characterised by three main townships and multiple settlements, the largest of which (in extent) is Mandeville (which is entirely large lot residential). The addition of the proposed Ōhoka Residential Subdivision would make Ōhoka more similar in overall geographic size to Mandeville, although with a denser (more efficient) use of land.



Figure 1.2 – Ōhoka Residential Subdivision Site in Relation to District-wide PODP Zoning



The proposed development is comprised of:

- 875 residential lots across a range of lot sizes;
- A large lot proposed to accommodate a retirement village of circa 250 residential units;
- A large lot proposed to accommodate a polo ground/facility; and
- Two lots (flanking an internal road and Whites Road intersection) proposed to accommodate a local commercial centre to serve the day-to-day shopping and other household needs of the wider Ōhoka community (inclusive of the proposed development).
- A number of non-developed/ecological areas that will function as stormwater management areas.

In total, the proposed subdivision could support an indicative 1,125 residential dwelling units/households excluding any residential apartments that could be developed above the ground floor in the commercial centre.



1.2 Report Scope

Savvy considers that there are two key adverse economic effects (costs) that need to be assessed for the proposed development. These are:

- The potential for the proposed commercial centre to generate adverse distributional effects on the existing centre network in Waimakariri District, and
- The permanent loss of capacity for land-based primary production.

These two key adverse economic effects (costs) are assessed in Sections 2 and 3 of this report respectively. Potential for other economic disbenefits is discussed in Section 4.1. Wetland, archaeological, transport and infrastructure impacts of the Project are acknowledged in Section 4.2. These impacts have not been quantified in economic terms but are comprehensively addressed (qualitatively) by other experts. A brief conclusion on actual and potential economic costs/disbenefits is contained in Section 5.

In preparing this report, Savvy has considered and/or relied on the following:

- The Waimakariri PODP to understand commercial centre zoning and the regulatory framework (objectives and policies) that support that hierarchy of centres.
- The StatisticsNZ Business Demography Data (2021-2023) which provides data on business and employment counts by detailed industry types in existing commercial centres.
- Aerial photos and other geo-spatial datasets to further understand existing centres and their use by the district community as well as Land Use Capability (LUC) 1-3 land within the district.
- A calibrated retail gravity model² that covers the full territorial authorities of Greater Christchurch³ to model the potential trade competition impacts of the proposed centre on other existing centres from which the wider and relevant effects on the social and functional amenity of existing centres (i.e., distributional effects) can be evaluated.
- The Reeftide Environmental & Projects Limited report (Soils Report).
- The McFarlane Rural Business report (Farm Report).

² The model has been developed by Market Economics Limited and has been made available to Savvy Consulting for the purpose of assessing the proposed development.

³ Christchurch City and parts of Selwyn and Waimakariri districts as delineated in the Canterbury Regional Policy Statement.



- The evidence of Chris Jones (Bayleys Real Estate) and Carl Davidson (Research First) which were presented during Hearing Stream 12D on the Proposed Waimakariri District Plan (and summarised in the current Application report).

1.2.1 Relationship With Other Application Reports

This report does not consider the gross economic benefits of the proposed Ōhoka Residential Subdivision. These have been assessed in the report by Market Economics (M.E). Having reviewed the content of that assessment I note its finding that the project will generate a range of significant economic benefits at the regional level, including:

- **Housing Market Impact:** By increasing land supply, the project will reduce market friction and help moderate house price inflation—critical in a district where prices have risen 3.5 times the national average (2021–2024).
- **Construction Phase:** In direct terms the development sustains around 202 jobs every year of construction from an \$80m annual injection into the construction sector (undiscounted). Accounting for flow on effects, the project will deliver \$400 million (undiscounted) in regional value added and nearly 3,700 job-years of employment over the development period.⁴
- **Ongoing Commercial Activity:** A new estimated 9,390m² local centre is projected to generate approximately \$65 million in annual turnover, contributing \$24 million in regional value added and supporting 462 jobs annually (undiscounted).⁵

I accept those findings and agree with the conclusion of the M.E report that the gross and net economic benefits of the Ōhoka Residential Subdivision project are substantial.

The economic costs assessed in this report should therefore be considered in the context of the gross economic (and other) benefits of the Fast Track application.

⁴ It is noted that because flow-on economic impacts (indirect and induced impacts) are influenced by the limitations of input-output multiplier analysis, that total economic impacts should be considered an upper limit, and that employment impacts may represent a combination of new jobs and sustained existing jobs.

⁵ Ibid.

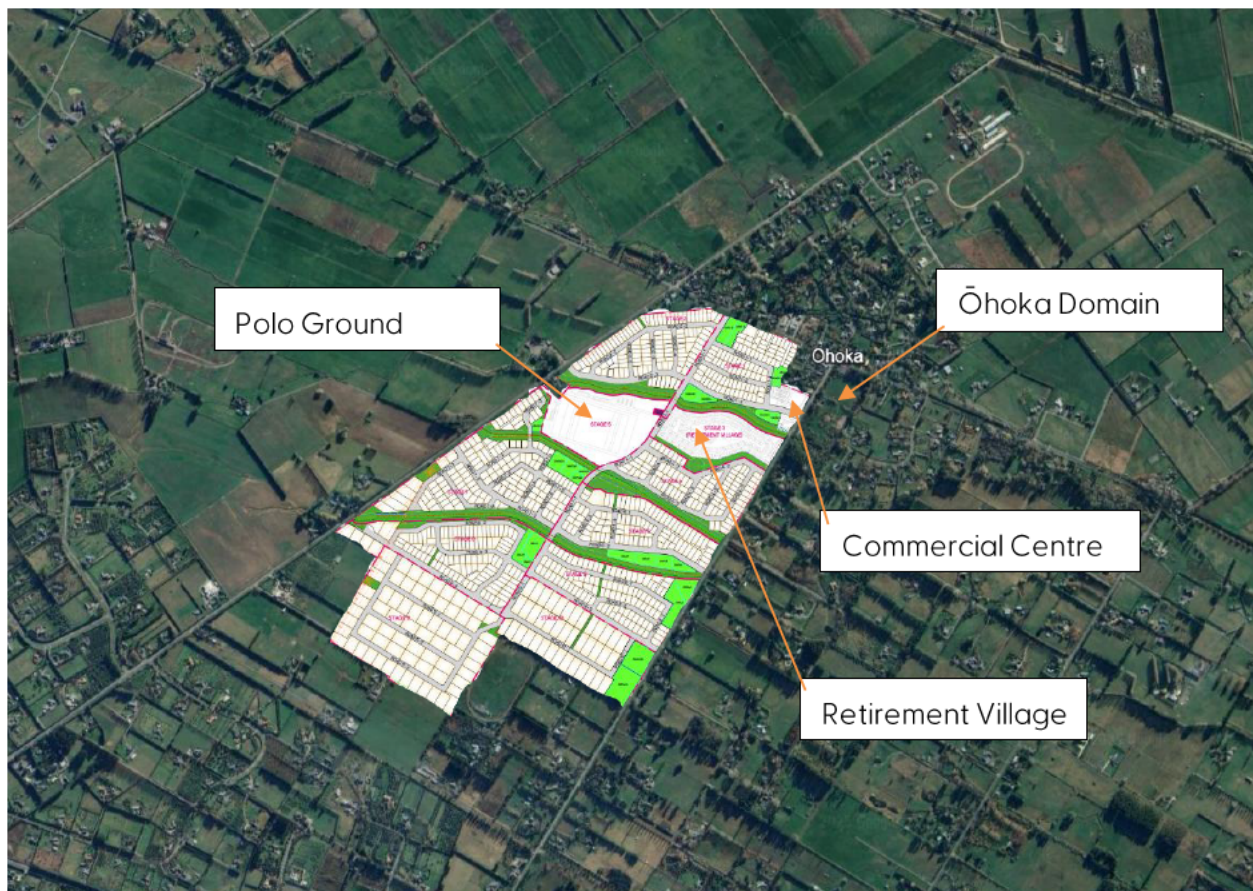


2 Potential Distributional Effects

2.1 Proposed Commercial Centre

Figure 2.1 shows the location of the proposed commercial centre in the Ōhoka Residential Subdivision. It is located at the north-eastern corner of the proposed development, where it is contiguous with the existing Settlement Zone and Ōhoka Domain – ensuring it is relatively central to the future extent of the Ōhoka community (inclusive of the proposed development). It is also close to the only existing retail activity in the settlement, being a very small convenience store associated with a G.A.S petrol station and workshop on the corner of Mill Road and Whites Road.⁶ Thus, the proposed centre location broadly consolidates current and future commercial activity in a single, accessible location.

Figure 2.1 – Location of Proposed Commercial Centre Relative to the Residential Subdivision and Wider Ōhoka Locality



⁶ This business operates in the NCZ.



2.1.1 Maximum Potential Centre Floorspace

The two lots that comprise the proposed commercial centre have a combined area of 14,900sqm (1.49 hectares). As they flank a main road entering the subdivision (off Whites Road), no other internal roads are considered likely within the commercial lots. Stormwater management areas also fall outside the commercial lot area. As such, Savvy considers that 100% of the lot area is developable for business and related activities. Applied to that is a proposed maximum building site coverage of 55%. This allows for no less than 45% of the lot area to be used for access ways, car parking, landscaping, pedestrian areas, and outdoor operational space associated with future businesses (such as waste management, storage and potentially outdoor dining). Applying the 55% site coverage gives a maximum ground floor footprint of 8,200sqm of gross floor area (GFA).

The building height limit is proposed at 10m above ground level. This could result in 3 storeys of development (depending on roof design). Maximum potential floorspace above the ground floor could therefore equate to 16,400sqm GFA. Combined with the ground floor, the maximum building envelope of the proposed centre is therefore 24,600sqm GFA. This is a floor area ratio (FAR) of 1.65.

2.1.2 Reasonably Expected Centre Floorspace

Savvy does not consider it likely that the proposed commercial centre will develop to this maximum intensity given the economic context of its location and the wider district. Typically, small/convenience centres are single storey developments, with 2 storey buildings less common but potentially becoming more common over time.⁷ Demand for apartments in Waimakariri District over the medium term (i.e. next 10 years, and also the anticipated development period of the proposed subdivision assumed for the purpose of this report) is expected to be relatively low and focussed on the main townships. As such, while some apartments *could* be provided in the proposed commercial centre above ground floor, Savvy does not consider that this would occupy the maximum building envelope (over and above expected business floorspace).

As a centre serving a residential settlement relatively close to, but outside of the main urban townships of the district, Savvy considers that business activity will be mainly established at ground level in the commercial centre. Savvy has however allowed for an indicative 40% of

⁷ Where apartments are enabled in small centres, and as apartment living becomes more accepted, local centres are expected to become more intensively developed, particularly in sub-urban locations.



the total ground floorspace to have business activity above it on the first floor.⁸ Savvy also considers that site coverage may be less than the 55% enabled by the proposed built form standards (and has assumed that 45% may be more likely for this centre). This is on the basis of advice from Carter Group that additional parking may be provided in the centre to support the popular Ōhoka Markets that operate on the adjacent Ōhoka Domain.

Based on these two assumptions, Savvy estimates a 6,710sqm ground floor footprint as reasonably expected (instead of a maximum 8,200sqm enabled), with a further 2,680sqm GFA as potential first floor business space.⁹ Combined, this equates to total 'likely' business floorspace of 9,390sqm GFA in the centre. This is a FAR of 0.63. While considered less likely to be included, any residential apartments provided for in the commercial centre would be in addition to this business floorspace. Table 2.1 compares the maximum building envelope with Savvy's scenario of expected business floorspace in the proposed centre.¹⁰

Table 2.1 – Total Enabled Floorspace and Expected Business Floorspace Scenario

	Maximum Building Envelope *	Estimated Business Floorspace
Indicative Gross Local Centre Area (sqm)	14,900	14,900
Net land share (excluding infrastructure)	100%	100%
Indicative Net Local Centre Area (sqm)	14,900	14,900
<i>Building Coverage</i>	55%	45%
Indicative Ground Floor Building Footprint (sqm)	8,200	6,710
<i>Estimated share of ground floor building with an upper floor(s)</i>	200%	40%
Estimated floorspace above ground floor (sqm)	16,400	2,680
Total Enabled and Expected GFA (sqm)	24,600	9,390
Total Floor Area Ratio	1.65	0.63

Source: Carter Group, Savvy Consulting. * Based on 3 storey development within 10m maximum height limit.

2.1.3 Tenancy Mix Scenario

It is Savvy's understanding that the proposed activity and built form standards for the commercial centre are akin to aspects of a Local Centre Zone (LCZ) in the PODP. Savvy supports this approach, as the stated purpose of the LCZ is "to provide for activities to support local communities and small settlements at a scale between neighbourhood centres and town centres". The objective of the LCZ is to be "the focal point for a range of commercial,

⁸ This may or may not be the same tenancy to that on the ground floor.

⁹ GFA figures are rounded to the nearest 10sqm.

¹⁰ Even if the centre is developed to the maximum site coverage of 55% but only provides for business floorspace on the ground floor, the total business GFA would be 8,200sqm and less than the floorspace tested for distributional effects.



community and service activities at a smaller scale than Town Centres to provide for the daily/weekly shopping needs of the local residential or nearby rural area, including enabling a range of convenience activities". At an estimated 9,390sqm of business GFA reasonably expected in the proposed commercial centre, this is much smaller in scale relative to the total business floorspace enabled in the district's town centres.

Given the range of activities enabled and anticipated in a local centre, Savvy has assumed a scenario of business floorspace for the purpose of this report that is broadly:

- 40% retail (i.e. food, liquor, restaurants, cafes, takeaways, pharmacy, florist, etc). This equates to 3,760sqm GFA.
- 40% commercial/commercial services (i.e. postal service, laundromat, real estate service, bank ATM, hair/beauty, gym, potentially a motel and small-scale office activity (including shared office space) etc). This equates to 3,760sqm GFA.
- 20% community/health (i.e. daycare, vet, medical centre, physio, etc). This equates to 1,880sqm GFA. The presence of some health services in the centre is considered an important factor in the viability of the retirement village also proposed within the Ōhoka Residential Subdivision.

The assumed first floor business floorspace (2,680sqm GFA) would most likely be limited to commercial/commercial service activity, with the ground floor containing all of the retail, and community/health floorspace, and the balance of the commercial/commercial services activity.

2.1.4 A Focus on Potential Retail GFA and Specifically Food, Grocery & Liquor Retail GFA

While the indicative commercial/commercial service and community/health floorspace in the above scenario is important for the functional and social amenity able to be delivered by the proposed commercial centre, these activities tend to be of secondary concern in managing adverse (distributional) effects on existing centres. Impacts on existing centre amenity, vitality and vibrancy are commonly linked to the presence and performance of the retail activity in a proposed new centre.

Of the indicative retail floorspace assumed in Savvy's scenario (i.e., 3,760sqm GFA), an estimated 29-36% of that is estimated to be made up by food, grocery and liquor retail



(between 1,100–1,350sqm GFA). That is, some combination of a small supermarket, liquor store (say), and/or some small specialist food retailers.¹¹

Food retail plays a core convenience role in local centres. For example, both the nearby Mandeville local centre and Oxford small town centre (discussed further below) are anchored by small supermarkets. These stores have an estimated GFA of 460sqm and 710sqm respectively. A small supermarket, potentially complemented by some additional food/liquor retail stores, is equally considered to be key to anchoring the proposed commercial centre in Ōhoka – and supporting the economic viability of the centre as a whole. This is because supermarkets generate substantial cross-shopping behaviour and therefore attract complementary retail and commercial service businesses that wish to co-locate with a supermarket.

The modelling of potential distributional effects later in this report is therefore focussed on the indicative food, grocery and liquor retail component of the proposed commercial centre. In doing so, Savvy captures:

- the economic effects of the largest (anchor) store likely to occur in the proposed centre,¹² along with a potential mix of other food and liquor stores that could be expected in a convenience-based centre.
- The economic activity that most reliably informs the main trade catchment of the proposed centre (with other retail activity generally sustained by demand within the anchor store’s trade catchment).¹³
- This approach also avoids the uncertainty around developing a scenario for the remaining retail tenancy mix¹⁴ and needing to develop multiple calibrated gravity models to analyse other retail store groupings (and report those results).

This modelling approach (focussed on the food, grocery and liquor component of potential retail floorspace) is one that Savvy has adopted in a number of (peer reviewed) plan changes and resource consent applications in the past to understand the likely scale and significance of potential distributional effects of a proposed centre. Savvy utilises a calibrated gravity

¹¹ Based on Savvy’s estimated realisable floorspace for the centre as a whole, 1,100–1,350sqm GFA of food, grocery and liquor floorspace equates to 12–14% of total business floorspace in the centre.

¹² Although the exact size of the potential future supermarket within the 1,100–1,350sqm of food, grocery and liquor retail floorspace estimated for the development scenario is unknown. The modelling and conclusions are not sensitive to what share of total food, grocery and liquor floorspace a supermarket comprises.

¹³ The trade catchment of facilities like a medical centre or vet may go beyond the supermarket trade catchment, depending on where the next nearest facilities are located (that have capacity for new clients).

¹⁴ This is however estimated to have a strong focus on food and beverage services to serve the needs of the centre’s main trade catchment as well as visitors to Ōhoka for the Ōhoka Markets and the proposed Polo facility.



model set up specifically to capture food, grocery and liquor demand and supply (i.e. a model developed specifically for that sector). Using the food, grocery and liquor modelling results, Savvy can consider the potential adverse economic effects of total expected retail, as well as the total retail, commercial and service floorspace on the existing centre network. This is addressed at the end of Section 2.

2.1.5 Proposed Centre Food, Grocery and Liquor Employment

While the gravity model is discussed in more detail further below, the common metric used to model both demand and supply (for food, grocery and liquor) is employment. The employment data uses a combination of the StatisticsNZ employee count, combined with industry specific estimates of working proprietors. This is referred to as the modified employment count or MEC.

To add the proposed centre's food, grocery and liquor 'supply' into the gravity model, it is necessary to translate the 1,100–1,350sqm GFA of indicative food, grocery and liquor floorspace into MECs in its first year of trading. The conversion of floorspace into employment has taken into consideration the food, grocery and liquor employment and floorspace in other centres in Waimakariri District and the wider study area, including within the Oxford and Mandeville centres. While floorspace productivities vary, Savvy has assumed total food, grocery and liquor employment in the proposed centre of between 43–44 MECs (low) and 56–59 MECs (high).

An indicative staging plan supplied by Carter Group indicates that the commercial centre would be developed as part of Stage 1 (with the staging moving south from Mill Road over time). Savvy has introduced the food, grocery and liquor MEC supply for the proposed centre in 2028 in the gravity model but notes that the first full year of trading could be expected sometime before or after 2028.

2.2 Household and Spending Growth

2.2.1 Household Projections

As an input to subsequent distributional effects modelling (using a gravity model), Savvy has assessed household projections for Waimakariri, Christchurch City and Selwyn District at the Statistical Area 2 (SA2) level (as defined using 2018 boundaries). These SA2 projections are based on a combination of the sub-national population projections by StatisticsNZ (December 2022), as well as the 2021 household projections at the territorial authority level. Considering the anticipated significant growth in the Waimakariri and Selwyn districts, the demand model adopts the High household projections for these districts, while adopting a Medium growth



projection for Christchurch City.¹⁵ This set of projections is referred to as the “status quo” household demand scenario for this report. Appendix 2 contains the status quo household growth projections by SA2 for the Waimakariri District.

While Waimakariri District Council has its own household projections,¹⁶ it has not been possible to adopt those projections because they do not provide the level of detail needed for retail demand modelling. The advantage of the StatisticsNZ projections is that they contain a SA2 breakdown of household growth by 47 different household types¹⁷ (each of which has a different store-mix and quantum of annual retail spending).

Savvy notes that at the Waimakariri District level, the StatisticsNZ household projections adopted for this assessment shows growth between 2026 and 2043 that is within 1% of total district growth relied on by Council – so is consistent in that respect. There are, however, expected to be some minor differences at the sub-district level between the StatisticsNZ projections relied on by Savvy and the Council-based projections (because of different assumptions applied by the Council in the allocation of district growth). In the absence of a side-by-side comparison at the 2018 SA2 level, Savvy cannot be certain of the scale of these differences. It is not anticipated that such differences would have a material impact on the modelling conclusions.

The status quo projections relied on for the retail gravity modelling for Waimakariri District indicate that the district had approximately 24,960 households in 2021 and this is projected to increase by 46% to 2043,¹⁸ reaching 36,400 households. This is total growth of 11,440 households over the 22-year period and equates to an average annual increase of around 520 households. This growth rate is one of the fastest in New Zealand.¹⁹

2.2.2 Status Quo Food, Grocery and Liquor Retail Demand Projections

Based on this status quo household growth projection, the retail demand model (explained further in Appendix 3) indicates that in 2023, total home-based household demand for food, grocery and liquor retailing generated by resident households in Waimakariri District may be approximately \$310m, increasing to \$329m in 2026 and \$496m by 2043. This is total growth

¹⁵ These assumptions are consistent with the approach taken by each Council in their respective NPS-UD assessments.

¹⁶ This reference is to projections that were available at the time that the gravity modelling for this report was carried out (2023). There are no material changes that would warrant re-running the gravity model at this time.

¹⁷ These household types are different combinations of household types (i.e., single person, couples, families with children, non-family households, multifamily households), age of household head, and annual household incomes.

¹⁸ The gravity model only accommodates projections out to 2043.

¹⁹ Under 2025 released district level population projections, Waimakariri District is ranked 10th of 67 territorial authorities (medium growth series) for both the quantum and percentage of long term growth.



between 2023 and 2043 of \$186m or 60%. Not all of this household demand is retained in Waimakariri District as some will be directed to centres in Christchurch (and minimal spend directed to Selwyn District).²⁰

Added to this annual household demand from home is:

- the estimated projected annual demand for food, grocery and liquor retail from businesses (allocated based on the distribution of businesses at the SA2 level),
- annual spend by households on food, grocery and liquor retail while households are at work (allocated based on the distribution of employment at the SA2 level), and
- estimated annual spend by tourists on food, grocery and liquor retail (allocated based on the distribution of accommodation businesses).

As discussed in Section 2.1.5, this dollar spend is translated into employment (MEC) equivalents to provide a common metric for both demand and supply in the gravity model. The calibrated status quo employment sustained by current and projected demand in Waimakariri modelled centres is outlined further below.

2.2.3 Modified Food, Grocery and Liquor Retail Demand Projections

While the status quo household and spend projections described above are used to understand a baseline of existing centre food, grocery and liquor retail performance without the proposed Ōhoka Residential Subdivision, the demand projections require some modification to accommodate the different household growth patterns that may arise in the district if the proposed development capacity is included (and taken up in the predicted timeframes). This section describes the approach taken to modify the status quo household growth projections for Waimakariri District for a 'with Ōhoka Residential Subdivision' housing supply outcome.

The proposed development is located within the Mandeville-Ōhoka SA2 (when using the 2018 SA2 boundaries).²¹ The status quo household growth projections (StatisticsNZ) indicate that the Mandeville-Ōhoka SA2 is projected to have 1,250 households in 2026, increasing to 1,670 households by 2043 (Appendix 2). This is projected household growth of 420 over the period that the proposed residential subdivision is estimated to be developed. This is strong growth, and only three (2018 defined) SA2s in the district are projected to have a higher quantum of growth in that period according to StatisticsNZ. These include:

²⁰ Leakage of spending out of Waimakariri District is discussed further below.

²¹ The 2023 SA2 boundaries split Ōhoka and Mandeville (among other changes in the Waimakariri District).



- Waikuku SA2 (which includes the land adjoining the eastern boundary of the Rangiora urban area and across to include Ravenswood (Woodend North) and ending at the coast), total growth of 1,180 households 2026–2043;
- Fernside SA2 (which includes the land adjoining the western boundary of Rangiora and Southbrook urban area and south to join Ōhoka), total growth of 660 households 2026–2043; and
- Rangiora North East SA2 (which includes some land in the existing urban area of Rangiora and the North East Future Development Area), total growth of 460 households 2026–2043.

At 420 additional households, the Mandeville–Ōhoka SA2 is projected (by StatisticsNZ) to have the same household growth as the Pegasus SA2 between 2026 and 2043. These household growth projections indicate that the proposed subdivision is located in an area of expected high demand.

As stated previously, the rezoning request is anticipated to have a yield of around 875 dwellings plus an indicative 250 retirement village units, giving a total household count when fully occupied of 1,125 households. Savvy had run the gravity model based on an earlier version of the proposed development plans that had a slightly different arrangement of residential land areas and a slightly (5%) lower overall dwelling yield of 1,070 households.²² It was not considered practical to re-build the demand side of the gravity model to account for the final development plans/yield.

The adopted (modelled) food, grocery and liquor retail demand projections have been based on a range of 850 and 960 households in the proposed development prior to 2043. The lower bound excluded the capacity of the retirement village (at least in the period prior to 2043) and the upper bound included the retirement village but excluded a portion of dwelling units in the village on the basis that the gravity model works on the assumption of households as ‘spending units’ across the centre network. Savvy has assumed a mix of independent and non-independent living in the proposed retirement village, with the latter having food provided and not necessarily purchased from the centre network like independent residents might.

At the time the model was built, the modelled household range that may carry out daily and weekly food, grocery and liquor shopping was set at 79–90% of the total dwelling yield. This now accounts for a slightly more conservative 75–85% of the actual proposed household yield contained in the Fast Track application. Slightly amending the modelled household range (to

²² At the time the model was built, the yield was estimated to be 850 residential dwellings and a 220 unit retirement village (total yield of 1,070).



say 875–1,020 for example)²³ is not expected to materially alter the gravity model results. I discuss the implications of modelling a slightly more conservative development household yield/demand projection of up to 960 below, and later in the report.

Even using these conservative household figures for the proposed development, the modelled household yield of the Ōhoka Residential Subdivision is greater than the projected growth of households in the Mandeville–Ōhoka SA2 between 2026 (Savvy has assumed that the first stage of houses could be occupied around 2028 if approved) and 2043, according to StatisticsNZ.

On the one hand, this may mean that the proposed Ōhoka residential subdivision will take longer to be fully taken up/occupied (if constrained by StatisticsNZ growth projections). However, given that housing demand in the Greater Christchurch urban environment of Waimakariri District that is outside the three main townships is relatively strong, and demand for housing specifically in Ōhoka is also considered to be strong,²⁴ but only limited housing capacity has been provided to meet that demand, Savvy considers that for the purposes of this report, a 10 year build-out of most of the subdivision (between indicatively 2028–2038) is reasonable.²⁵

On that basis, and assuming the proposed development takes up all projected growth in the SA2 in that period (i.e., 420 new households), the residual growth currently unanticipated by StatisticsNZ in that location is between 430 and 540 additional (spending) households (based on the adopted household range for the gravity modelling of between 850–960). If all independent living dwellings in the proposed development are assumed to be taken up by (indicatively) 2038 then this implies that the proposed Ōhoka residential subdivision would need to:

- attract additional growth of 430 (lower) to 540 (upper) households away from other parts of Waimakariri district (a reallocation of projected district household growth so that more occurs in the Mandeville–Ōhoka SA2); or
- attract 430 (lower) to 540 (upper) net additional households to the district not anticipated in the growth projections.

²³ Maintaining the same assumptions and specifically excluding some of the households in the retirement village who are not independently purchasing food and liquor from the centre network in the upper range.

²⁴ This is discussed further in the real estate report by Mr Jones and the Research First report.

²⁵ Savvy understands that StatisticsNZ projections do take into account dwelling capacity information provided by local authorities. As a growth area unanticipated in Council planning documents, it is considered likely that the introduction of the proposed housing capacity (if approved) could have a modifying effect on household projections within Waimakariri District going forward. Similarly, the capacity enabled in the PODP may inform future updates of the StatisticsNZ household growth projections.



The latter scenario is not considered likely or realistic but is included for the purpose of sensitivity testing in the gravity model discussed further below. It may be reasonable to expect that the development (if strongly marketed) could attract some households from outside of the district (including from Christchurch and Selwyn) that were not anticipated in the StatisticsNZ growth projections for Waimakariri, but not all of them. To be conservative, Savvy relies on a reallocation of projected growth within the district as the basis for distributional effects reporting as this will test the maximum distributional effect on Waimakariri centres associated with the proposed development.

These modified growth projections are constructed as four scenarios. Scenarios 1 and 2 reflect the preferred 'reallocated' residual household growth outcome with a lower and upper dwelling yield for the proposed development respectively. Scenarios 3 and 4 reflect the 'net additional' to total district growth outcome (independent living dwellings only) with a lower and upper dwelling yield respectively.

For scenarios 1 and 2, it is assumed that the proposed development will increase the number of future households in the Mandeville-Ōhoka SA2 by reallocating growth from neighbouring rural and small urban (settlement) SA2s rather than drawing household growth from across the whole district. Savvy has selected 11 out of 32 (2018) SA2s in the district from which some projected household growth is reallocated to Mandeville-Ōhoka.²⁶ These SA2s are concentrated in the south-east of Waimakariri District and were selected because they are indicative of locations where households seek to live near main urban areas, but not in them, and in commuting distance of Rangiora, Kaiapoi and Christchurch. This is on the basis that Ōhoka offers similar commuting characteristics to those selected SA2s.

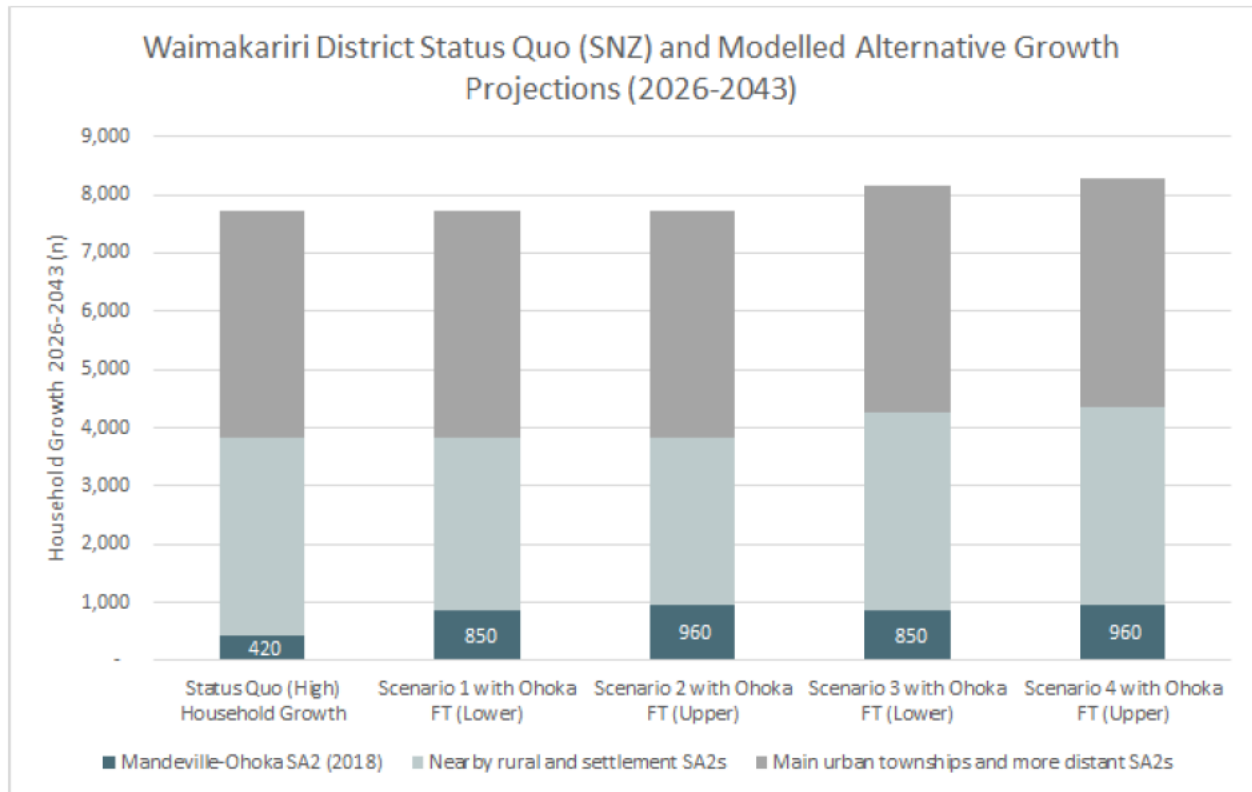
A table showing the status quo and modified scenario 1-4 household projections developed for the demand-side of the gravity modelling are included in Appendix 2 and are summarised below. Figure 2.2 shows that the impact of the reallocation of household growth is relatively subtle at the aggregate area level for Scenarios 1 and 2. Scenarios 3 and 4 increase total district household growth between 2026-2043 by a minor 5-7%.²⁷

²⁶ Appendix 2 shows the SA2s from which a portion of projected household growth has been redirected to the Mandeville-Ōhoka SA2.

²⁷ Had the modelling been adjusted to a modelled range of 875-1,020 spending households in the proposed development the net increase of 25-60 households would still be reallocated across the same 11 SA2s in scenarios 1 and 2 (reducing each SA2s 2026-2043 household growth by 2-5 households each – a minimal change over that time period). Under scenarios 3 and 4, the total district household growth would increase by 6-8%.



Figure 2.2 – Status Quo and Alternative Modelled 2026–2043 Household Growth Projections Assuming Take-up of 850–960 Independent Dwelling Units in the Proposed Development Before 2043



Savvy acknowledges that the nearby SA2s selected to reallocate demand in scenarios 1 and 2 (on the assumption that the proposed development will be mostly taken up and at a faster rate of household growth otherwise projected for the Mandeville–Ōhoka SA2), influence where distributional effects may be felt in the centre network. For example, if Savvy had reallocated all growth from the Rangiora township, then the reduction in projected households and therefore household spending in Rangiora would have largely impacted centres in, or nearest, Rangiora.

However, the proposed Ōhoka Residential Subdivision (and Ōhoka generally) does not offer a residential environment (or density) directly comparable to Rangiora, and hence Savvy does not see the proposed development competing strongly with the Rangiora urban area for household growth. Savvy considers that the reallocation of household growth in scenarios 1 and 2 is reasonable for the purpose of assessing distributional effects.



2.3 Distributional Effects

2.3.1 What are Distributional Effects?

Through an RMA lens, distributional effects refer to adverse effects on centres as a whole. It is a measure of the reduction in centre-wide functional and social amenity, vibrancy and vitality. Importantly, it does not relate to adverse effects on one store, or a group of related store types directly impacted by a proposal. It is the extent to which adverse effects on that one store (or group of related stores) affect the functional and social amenity of the whole centre once those impacted stores are considered in that context.

The direct impact of a proposal on one store (or a group of related store types) is referred to as a trade competition effect. It is the result of a loss of customers (and their spending) that are attracted to the proposal – i.e. a shift in shopping behaviour when a more convenient and/or attractive option becomes available. A loss of customers results in a loss of sales (and a loss in foot-traffic results in a loss of vibrancy and vitality).

A loss in sales may simply mean reduced profit for the store owner. As the loss increases and requires a response to remain commercial viability, the store may increase its marketing/relative attractiveness in some way, or if that is not possible, mitigate the loss by reducing its trading hours to curb operational costs, reduce staffing numbers to curb operational costs, or close the business (a worst-case scenario). These sequential options mean that there is usually a high threshold before store closures occur.

While trade competition effects cannot be considered in decision making under the RMA, it is necessary to understand trade competition effects in order to determine if distributional effects on the centre as a whole are likely to arise. In other words, it is necessary to model the direct effects so that the indirect effects on a centre can be considered. Context is important to that consideration. When an impacted store (or stores) plays a significant role in a centre (i.e. in terms of sales/foot-traffic generation/employment) there is greater potential for distributional effects to arise. When that impacted store is the anchor store of a centre, effects can be amplified (due to that anchor supporting cross-shopping to other businesses in the centre).

However, for functional amenity to reduce, this would require store closures (the worst-case scenario). Even if these vacant stores are re-occupied by a new business, if the mix of stores offered in a centre changes, such that there is a reduced range of stores or a core store type is no longer available, then this may result in a reduction in functional amenity. Social amenity, vibrancy and vitality are all measures of people activity and opportunities for interaction. These can be mitigated if closed stores can be re-tenanted. Only if there are multiple,



sustained vacancies throughout a centre, are vibrancy and vitality impacted. This can cause a downward spiral of a centre if remaining landowners cease to invest in their properties and visual amenity further deteriorates.

Minor reductions in sales (or employment as used as a proxy for sales in the modelling below) are unlikely to be sufficient to lead to distributional effects at a centre-wide level, primarily because they are unlikely to cause store closures. The duration of reductions in sales is also directly relevant as it influences what response a business may choose to manage a reduction in sales. In other words, when catchment growth is anticipated, store owners will know that any impacts on sales (due to new competition entering the market) may be offset in time. In such situations, they may be more likely to wear the loss of profit for that period or implement lighter measures to reduce costs in the interim until store performance returns with further catchment growth. Such responses may be imperceptible to the community (i.e. there would be no distributional effects).

It is because of these market processes that any assessment of distributional effects should include:

- An analysis of the context of potentially impacted store types relative to total centres (see for example Appendix 4 which shows food, grocery and liquor retail employment in modelled centres relative to total employment in SA1 defined centres),
- quantification of the scale of trade competition effects in the first year of trading for the proposal (this is covered in Sections 2.3.7 and 2.3.8), and
- projected performance of impacted store types without and with the proposal, so that the duration of trade competition effects can be estimated (also covered in Sections 2.3.7 and 2.3.8 below),
- an overall evaluation of the likelihood and scale of distributional effects on centres containing impacted stores taking into account each of the above (this is covered at the end of Section 2).

2.3.2 Gravity Model Overview

The purpose of this section is to estimate the potential retail distributional effects of the proposed commercial centre on the existing centre network by modelling direct trade impacts associated with new food, grocery and liquor retail supply, but also additional household growth (demand) focussed on the Mandeville-Ōhoka SA2.



As noted, in order to assess the retail effects of developing the proposed local centre, Savvy has relied on a gravity model approach²⁸ that covers the 3 territorial authorities that make up Greater Christchurch. This model has been calibrated to match the approximate 2021 market situation across the main centres of Waimakariri District, Christchurch City and Selwyn District (the Study Area). Using this calibrated baseline, changes in the location and scale of demand and supply can be made, with the model estimating how this impacts the performance of existing centres over time.

2.3.3 Existing Centre Network (PODP Zoning)

The PODP supports (through objectives and policies) commercial growth within a network of centres and seeks to protect the role and function of TCZ's at the top of the centre hierarchy. LCZs and NCZ's are also to be supported and maintained and new commercial growth should not adversely affect the investment in public amenities and facilities in both the TCZ and LCZ.

Based on PODP zoning, Waimakariri District's centre network is comprised of:

- 4 Town Centre Zones (TCZ); Rangiora, Kaiapoi, Oxford and North Woodend (emerging).
- There are large format retail zones at the southern end of Rangiora (Southbrook) and in Kaiapoi (Waimakariri Junction).
- Rangiora also supports one LCZ (Arlington) and two neighbourhood centre zones (NCZs); Lillybrook and West End.
- There is also a Countdown store in Rangiora that is in a residential zone. It is mentioned here because it is included as a 'centre' in the food, grocery and liquor gravity modelling.
- South of the North Woodend TCZ is one complementary LCZ (Woodend).
- The Pegasus area to the east also has a LCZ.
- In Kaiapoi, the TCZ (which is also extended by an adjoining Mixed Use Zone) is supported by 3 LCZs (Silverstream, and one each north and south of the TCZ). There are 2 NCZs in Kaiapoi.
- The Mandeville settlement area contains a LCZ and the Ōhoka settlement area contains a NCZ. However, this is limited to the petrol station and mechanics. While the

²⁸ Developed and made available by Market Economics.



‘shop’ at the petrol station supplies some grocery items, Mandeville NCZ is effectively the closest convenience *centre* for the existing Ōhoka community.

While Savvy has not purchased data that shows where existing residents of Ōhoka currently shop (i.e. spending data), Savvy has analysed data that shows which retail centres residents of the wider Mandeville-Ōhoka SA2 ‘visited’ in 2021 (whether for shopping or other purposes). This is based on GPS data that tracks a sample of cell phones over a year. Savvy has included a map in Appendix 4 showing the results of that data. The extent of the map is limited to just those centres in southern Waimakariri District, Christchurch City and northern Selwyn District.

It shows that Mandeville-Ōhoka residents visit the local Mandeville centre. Large concentrations of visits are observed in Rangiora, Southbrook and Kaiapoi. There are also concentrations of visits to Northwood²⁹ and Papanui/Northland’s in Christchurch City, as well as the Christchurch CBD. These patterns confirm expected shopping behaviour, with the Mandeville centre providing for some local convenience shopping needs at present, with the balance of shopping needs currently met by higher order centres (which may also be close to places of employment or schools).

Outside of the Mandeville LCZ, spending by Mandeville-Ōhoka SA2 residents will currently make up a very small portion of sales in each higher order centre visited. Therefore, Savvy would expect those same centres to experience some minor reduction in spending if local retail and service supply in Ōhoka was increased by the proposed commercial centre to meet more of the current residents’ needs locally. This change in spending patterns is the basis of assessing retail distributional effects – i.e., to substantiate the significance (or otherwise) of that redistributed retail spending.

2.3.4 Calibrating the Food, Grocery and Liquor Retail Model

As stated above, the gravity model for Greater Christchurch is calibrated to a 2021 base year. This means that estimated demand for food, grocery and liquor retail arising from households, businesses and tourists across all (2018) SA2s in Waimakariri, Christchurch and Selwyn in that year (whether measured in dollars, floorspace, or in this case, employment) closely matches the supply of food, grocery and liquor stores in that study area in 2021.³⁰

²⁹ With further development of Waimakariri Junction large format retail centre, visitation to Northwood may be expected to decrease in the future.

³⁰ A feature of the M.E Gravity Model for Greater Christchurch is that it assumes a ‘closed system’, with no leakage in or out of the Study Area. The model does identify flows of spending across territorial boundaries within the Study Area. This closed system approach is not considered a material limitation with respect to the Food, Grocery and Liquor Sub-model for the reason stated above.



In recognition that some centres have very localised catchments, and some have district or even region-wide catchments (in the case of the Christchurch CBD for example), calibration of a gravity model requires different attractiveness's to be set for each centre. The higher the attractiveness, the more that centre pulls in spend (and therefore draws from a wider catchment). Suburban convenience centres tend to have only low attractiveness settings because they need only draw demand from a localised catchment.³¹ Similarly, centres in settlements also tend to have low attractiveness settings, as they don't need to work very hard to attract demand (even from a broad geographic area) because there are very few competing centres (shopping alternatives).

A food, grocery & liquor gravity model is the easiest type of gravity model to calibrate because food, grocery and liquor spending is highly motivated by convenience and because supply is relatively evenly spread across a centre network and therefore close to the source of demand (particularly in urban areas).

As alluded to above, a feature of the gravity model utilised for this report is that while it is driven by spending (demand) and sales in retail store types (i.e., monetary transactions), the model uses MEC employment equivalents for both demand and supply. Using an employment metric overcomes the difficulty of obtaining (or even deriving) sales data for individual stores (which is commercially sensitive). Employment data by detailed store types is however freely available (down to a street block or SA1 geographic area) from StatisticsNZ. There is also a strong correlation between annual sales and employment within each retail store type in a given year.

Annual demand for each retail store type (calculated according to 2018 SA2 boundaries) can also be converted relatively simply from dollars to employment sustained by that spending by applying average ratios of demand and supply across the study area. The results of the food, grocery and liquor gravity modelling run for this assessment (i.e., trade competition effects discussed further below), are therefore expressed in terms of changes in employment in each centre.

It is important to think of the employment and employment changes in the gravity modelling results below as if they were sales and changes in sales. As discussed above, a reduction in sales does not necessarily mean a reduction in staff counts. Similarly, stores can increase their sales without always growing their staff count (i.e. they just become more productive/profitable). The gravity modelling below is not intended to demonstrate the direct effect on staff counts in centres as a result of the proposed commercial centre (and would not be

³¹ New stores are however more attractive than old stores (at least initially) and full-service supermarkets are more attractive than non-full-service supermarkets (i.e. smaller sized supermarkets that have a more limited range). These factors are taken into account when setting the attractiveness of a proposed new store or centre.



accurate in that respect). Staff count changes fall under the general umbrella of distributional effects which are considered after trade competition effects are modelled.

While the gravity model currently includes all of the main centres in the study area, it does not include every centre or every store (with some food, grocery and liquor stores located in non-centre zones and most of the very small centres also excluded). In 2021, the centres that are included in the food, grocery and liquor gravity model captured on average:

- 89% of total food, grocery and liquor supply (employment) in Waimakariri District.
- 68% of total food, grocery and liquor supply in Christchurch City.
- 91% of total food, grocery and liquor supply in Selwyn District.

It is important not to model all household and business demand for food, grocery and liquor retail arising in the study area when not all supply of those store types is included in the gravity model. This would challenge the ability to calibrate demand and supply in the model. As such, Savvy has scaled down demand in each territorial authority pro-rata the share of supply captured in modelled centres in each territorial authority (stated above).³² In doing so, a portion of demand is left to sustain the supply in other centres/non-centre locations not included in the supply-side of the gravity model.

2.3.5 Supply of Food, Grocery and Liquor Retail 2021 – Modelled Centres

2021 employment in the food, grocery and liquor sector that exists in centres³³ included in the gravity model is summarised for Waimakariri District centres in Figure 2.3 below. The full list of included centres, and their respective food, grocery and liquor retail employment in 2021 is shown in Appendix 5.³⁴

³² While this scaling could also be done by applying an overall average % capture across the Study Area, this was tested and the scaling applied with district level capture percentages provided more intuitive leakage results, particularly for the food, grocery and liquor sector.

³³ Defined at SA1 level.

³⁴ The Ōhoka NCZ (recently zoned in the PODP to recognise existing activity in that parcel), is excluded from the list of centres in the gravity model. It does not contain any food, grocery or liquor stores (and is not expected to in future).



Figure 2.3 – Count of Food, Grocery and Liquor Store Employment by Centre in Waimakariri, 2021 (MECs)

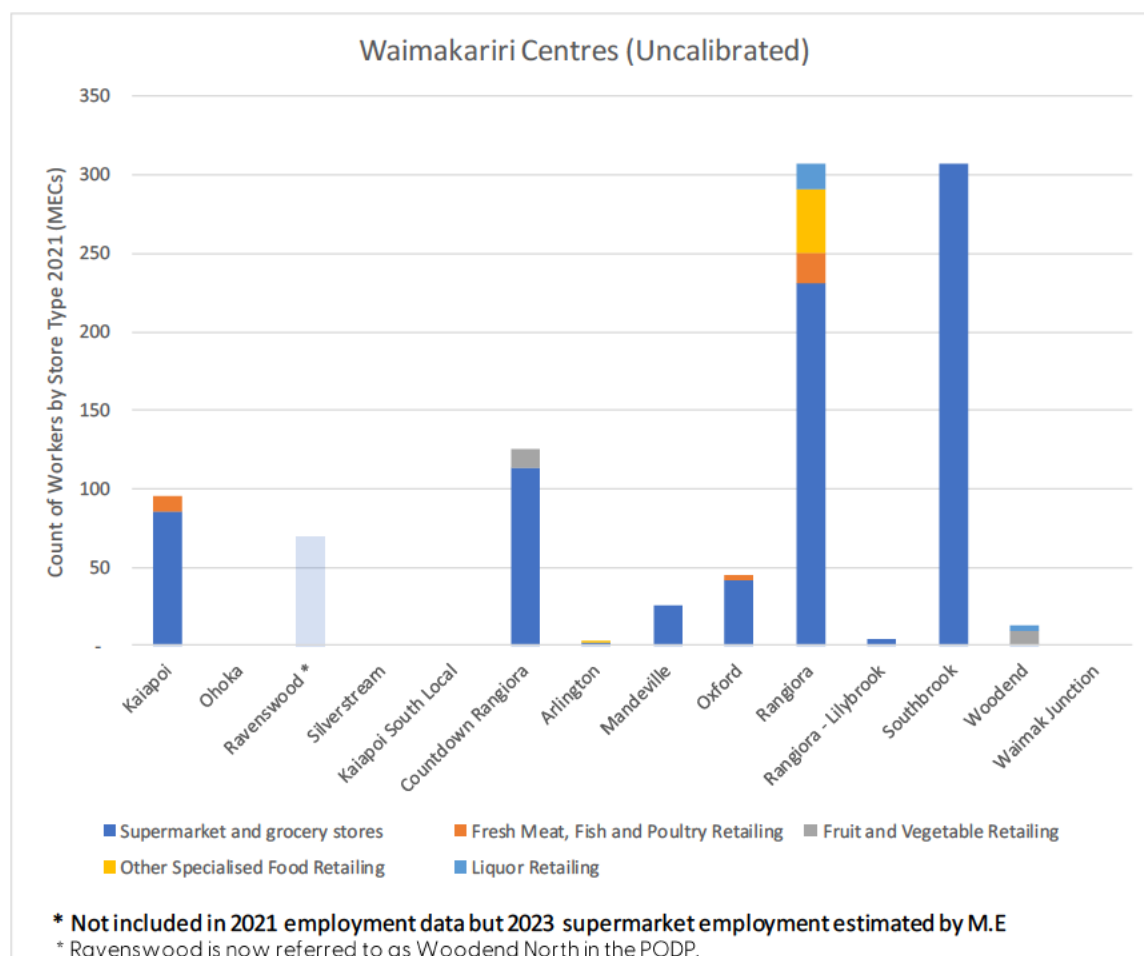


Figure 2.3 shows that the largest count of employment in the food, grocery and liquor sector in 2021 was in Rangiora Town Centre and Southbrook. The Rangiora employment comprises a mix of store types in the sector, while the Southbrook employment is supermarket only (Pak'n Save). The Countdown Rangiora has the next highest employment count, followed by Kaiapoi Town Centre. Mandeville contained approximately 26 supermarket staff in 2021, and the larger Oxford centre contained a total of 45 food and supermarket jobs.

This level of centre employment is sustained by demand in that year (with demand assumed to equal supply within the study area). As demand apportioned to modelled centres increases over time with household, employment and tourism growth, the amount of employment in the food, grocery and liquor sector is also expected to grow to meet that demand. This may be through existing stores employing more staff, or new businesses being sustained in the market.



2.3.6 Adjusting for Known Changes in Supply Since 2021

Figure 2.3 shows that not all centres included in the gravity model contained food, grocery and liquor employment in 2021. This is not to say that that will always be the case, but the model does not have the functionality to add employment (i.e. sales) in a centre that does not have any in the calibrated baseline (2021).

Some centres in Waimakariri District are relatively new (prompted by strong household growth and greenfield expansion). An important part of gravity modelling is to manually include known changes in supply as part of the status quo scenario. An example of this is the Woodend North centre where a New World has opened in 2021 but after StatisticsNZ reported employment for 2021. Savvy has included estimated employment for this store as part of the 2023 (and subsequent) model runs,³⁵ so that it forms part of the status quo supply picture. That estimated Woodend North employment is shown in Figure 2.3 (pale blue bar), to illustrate where it fits in the supply context.³⁶

A Woolworths supermarket has also opened in the Waimakariri Junction centre in Kaiapoi since 2021. It opened in December 2023 with between 80–85 staff, making its first full trading year 2024. The gravity model has also been updated to include this more recent change in supply. Savvy has not sought to include known supply changes in Christchurch City or Selwyn District given the focus on Waimakariri District, and because this would not be expected to materially alter results.

2.3.7 Status Quo Scenario – Food, Grocery and Liquor Retail Supply 2023–43

Table 2.2 below is the output of the calibrated food, grocery and liquor retail gravity model (inclusive of known recent changes of supply for Waimakariri District). It is the “without proposed Ōhoka commercial centre” scenario (status quo). While the model is run for the whole study area, the results are just shown for modelled centres within Waimakariri District. The nearby Mandeville LCZ is highlighted for ease of reference.

In 2021, the model indicated that Waimakariri District demand for retail in the food, grocery and liquor retail sector was 109% of supply located in the district. In other words, some food, grocery and liquor retail spend leaks south to centres in Christchurch City (although not as

³⁵ The model runs a snapshot in 2023, 2028, 2033, 2038 and 2043.

³⁶ In Figure 2.3, it is labelled Ravenswood, which was the development name prior to the PODP.



much as food, grocery and liquor stores demand from Selwyn District leaks north to Christchurch City in 2021).³⁷

Table 2.2 – Status Quo Food, Grocery and Liquor Store Employment by Centre in Waimakariri Without the Proposal (MECs)

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026- 2043
Arlington	5	5	5	6	6	7	2
Countdown Rangiora	135	143	150	166	191	212	69
Kaiapoi	98	74	77	83	93	101	27
Kaiapoi South Local	-	-	-	-	-	-	-
Mandeville	33	35	37	40	47	52	17
Oxford	55	58	61	66	74	82	24
Rangiora	312	330	348	384	441	491	161
Rangiora - Lilybrook	5	6	6	7	8	8	3
Ravenswood (Woodend North)	73	78	84	97	117	135	57
Silverstream	-	-	-	-	-	-	-
Southbrook	318	318	335	369	424	470	153
Waimak Junction	-	81	85	92	103	112	31
Woodend	14	14	14	16	19	21	8
Ohoka NCZ (Petrol Station)	-	-	-	-	-	-	-
Ohoka (Proposed Centre)	-	-	-	-	-	-	-
Total Waimakariri Centres	1,048	1,142	1,203	1,326	1,523	1,692	550
Mandeville & Ohoka Combined	33	35	37	40	47	52	17

Source: M.E Greater Christchurch Retail Gravity Model - Food, Grocery and Liquor Sub-model, 2024.

In the status quo scenario, the Woodend North New World is included from 2023 onwards and Waimakariri Junction Woolworths is included from 2026 onwards as discussed above (i.e., known additions to supply post February 2021 assigned to the closest model run year). The Kaiapoi South Local centre and Silverstream centre did not contain any food, grocery and liquor retail employment in 2021, and are not projected to include any such employment over the modelling horizon.³⁸

Table 2.2 shows that demand growth projected between 2021 and 2023 would sustain total food, grocery and liquor store employment (as a proxy for sales) in modelled centres in Waimakariri District of 1,048 MECs in 2023. Based on status quo High growth projections and excluding any impacts from the proposed Ōhoka Residential Subdivision and commercial centre on both demand and supply patterns, employment (as a proxy for sales) in the sector is estimated to increase to 1,142 MECs in 2026, and 1,692 MECs by 2043. This is total growth of 550 MECs (as a proxy for sales growth) in the food, grocery and liquor sector spread across 11 centres in Waimakariri District that are included in the model between 2026 and 2043.

Savvy notes that the Mandeville local centre (a key focus for this assessment because of its proximity to Ōhoka) would be projected to sustain an additional 17 food, grocery and liquor

³⁷ Savvy notes (from the modelling process) that this leakage is very slightly improved by the addition of a new centre in the Ōhoka Residential Subdivision.

³⁸ While this may not hold true for the new Silverstream centre, any additions in this very small centre would not materially change the modelled results.



MECs between 2026 and 2043 if it remained the only local centre in that part of the district. As discussed above, this projected employment (i.e. sales) growth in the centre may be manifest as a busier, more productive supermarket that can support additional staff, or the addition of one or more new food, grocery or liquor stores (with the LCZ in Mandeville having some vacant land upon which new development could occur).

Table 2.2 is the baseline against which the potential effects of the proposed Ōhoka Residential Subdivision and commercial centre can be measured (and assuming no other supply changes in the market other than the proposal).

2.3.8 Food, Grocery and Liquor Supply Changes with Proposed Ōhoka Residential Subdivision and Commercial Centre

Given that Savvy has sought to model distributional effects associated with potential changes to both supply and demand patterns associated with the proposed Ōhoka Residential Subdivision and commercial centre, it can be difficult to understand the dynamic changes that the gravity model is applying using just the outputs. As such, Savvy has tested changes to demand and supply separately to help provide confidence that the model is delivering logical results. These scenarios, and the results they show, are described in Appendix 6.

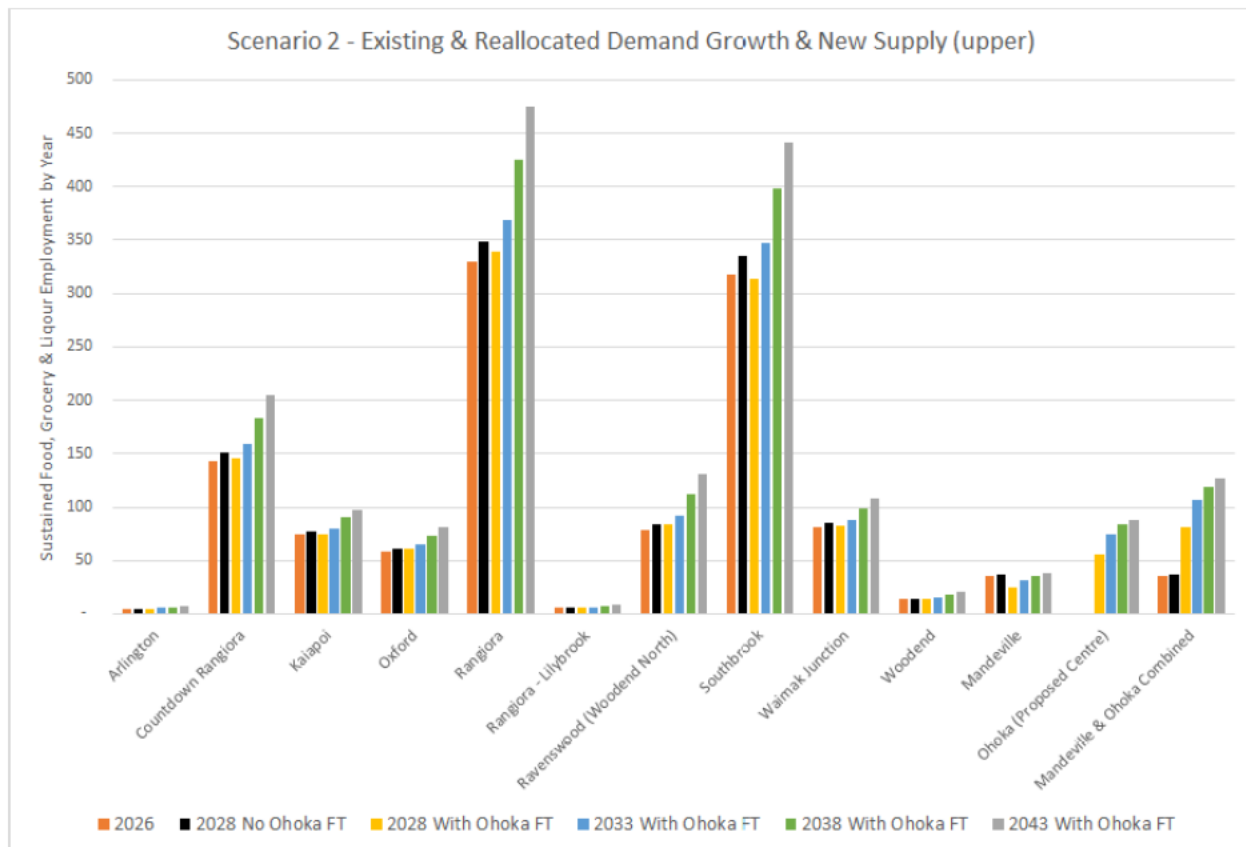
Having tested these proposed development changes in isolation, Savvy is confident that the combined demand and supply scenarios can be relied on.³⁹ The results for scenarios 1 and 2 are detailed in Appendix 6, with the slightly higher impacts of Scenario 2 summarised in Figure 2.4 below, which shows food, grocery and liquor employment (i.e., as a proxy for sales) sustained in Waimakariri District centres between 2026 and 2043.⁴⁰

³⁹ Notwithstanding that all models have limitations, and that Gravity Models are a simulation of current and future shopping patterns only.

⁴⁰ Savvy runs the lower supply alongside the lower dwelling yield scenario for the demand modelling (850 dwellings or households) and the higher supply alongside the upper dwelling yield scenario for the demand modelling (970 spending households).



Figure 2.4 – Scenario 2 Impacts of the Proposed Development on Centre Employment (Food, Grocery and Liquor Employment Only) – Higher Dwelling Yield (960 Spending Households) with Higher Employment Supply



Excluding the Mandeville centre (discussed separately below), the key findings for food, grocery and liquor centre employment impacts (as a proxy for sales) under scenarios 1 and 2 ‘with’ the proposed Ōhoka Residential Subdivision and commercial centre are as follows:

- When comparing where each centre providing a food, grocery and liquor role would be in terms of projected employment in 2028 without the proposed development (i.e., black bars in Figure 2.4) and where that employment would be with the proposed Ōhoka Resident Subdivision and commercial centre in 2028 (i.e., yellow bars in Figure 2.4), the impact ranges from a -1% reduction of food, grocery and liquor employment (i.e. sales) in Oxford, Woodend North and Woodend, and a -6% reduction in Southbrook (Pak’n Save).
- The key Town Centres of Rangiora and Kaiapoi have an estimated impact in 2028 of -2% and -3% respectively. These are the impacts under scenario 2 (with the higher dwelling yield (assumed 960 spending households) in the proposed development, but also a slightly higher supply of proposed food, grocery and liquor employment to go with that). Under scenario 1 (a conservative 850 dwellings in the proposed



development and slightly lower supply of centre food, grocery and liquor employment to go with that), the impacts across all of those centres are lower.

- This shows that based on the GFA/employment modelled, direct trade impacts on the centre network are **very minor**. Importantly, all these centres (except Southbrook) would still have experienced growth in their food, grocery and liquor store employment (i.e. sales) between 2026 (orange bars) and 2028 – the period when the commercial centre in the proposed Ōhoka Residential Subdivision would (indicatively) have started operating. Southbrook’s employment would be 1% lower in 2028 than it was in 2026 (a minimal sales reduction equivalent to 4 less jobs out of a significant 318) but it has higher employment than it did in 2026 on or before 2033.
- This means that while all centres (other than Mandeville) may face a very minimal opportunity cost in terms of future employment in 2028, there is no real cost, as all but one centre will continue to grow – improving in vitality, vibrancy and social and functional amenity delivered to the community.

These results show that:

- a) some of the proposed Ōhoka commercial centre food, grocery and liquor supply modelled in scenarios 1 and 2 is sustained by the growth already projected in the Mandeville-Ōhoka SA2;
- b) some is sustained by additional household growth attracted to Ōhoka by the proposed development and assumed to be taken up indicatively over a ten-year period;
- c) some is sustained by retaining more existing local resident demand within Ōhoka; and
- d) retail demand growth generally in the district is such that any redistribution of spending (including minor reallocation of household growth towards Ōhoka) offsets nearly all potential trade impacts on employment (i.e., as a proxy for sales) in existing centres.

As far as the wider centre network is concerned, the gravity model shows that the scale of food, grocery and liquor activity reasonably assumed to be supplied in the proposed commercial centre (43–56 MECs in 2028) is sustainable if the residential dwelling capacity of the Ōhoka Residential Subdivision were to be approved. Had Savvy modelled considerably more food, grocery and liquor employment in the proposed commercial centre (i.e. a considerable larger centre than enabled and expected to be developed), the impacts on other centres would have been correspondingly larger (less sustainable). However, Savvy is confident that a small incremental increase on the supply that has been modelled would also



avoid any significant adverse effects on the functional and social amenity of the wider centre network.

Here Savvy focuses on potential impacts on the Mandeville LCZ under scenarios 1 and 2:

- Mandeville is a small convenience centre that was fully developed, but has some additional land (5,635sqm gross) zoned in the PODP to enable further carparking and floorspace growth. It currently has a small FreshChoice supermarket (estimated at around 460sqm GFA) and 7 other tenants including a self-service petrol station, a childcare centre, beauty salon and four food and beverage outlets. The supermarket made up 26% of centre employment in 2021 according to StatisticsNZ data.
- Growth in the Mandeville centre's trade catchment between 2023 and 2026 (i.e., just prior to development of the proposed centre) is estimated to sustain additional sales (equivalent to around 2 additional jobs) in the food, grocery and liquor sector (and would sustain additional jobs (i.e. sales) in other retail and service activities too (but are unquantified)). This indicates that landowner's plans⁴¹ to extend the village centre into the additional land zoned in the PODP may be realisable in the short term. It is on this basis that Savvy compares the relative impacts of the proposed Ōhoka Residential Subdivision and commercial centre on the 2026 baseline for Mandeville, i.e., impacts on a slightly bigger centre than seen today (and potentially fully developed in terms of PODP zone area).
- The modelled impact of the proposed development scenarios 1 or 2 show that in 2028, the proposal could reduce Mandeville food, grocery and liquor employment by 24-33% compared with what it might otherwise have expected to be by 2028. This equates to a reduction in sales equivalent to 9-12 less jobs.
- Expressed a different way, food, grocery and liquor employment in Mandeville would be 21-29% less in 2028 than expected employment in 2026 (before the proposed commercial centre opened its doors (i.e., 7-10 less than in 2026)). Importantly, under scenario 1, the Mandeville LCZ would have recovered food, grocery and liquor employment back to 2026 levels by 2033 (i.e. within 7 years). Under scenario 2, the model shows that employment would take till between 2033 and 2038 to return to expected 2026 levels (i.e. recovery within 7-12 years). Under both scenarios, the Mandeville centre would continue positive food, grocery and liquor employment (i.e.

⁴¹ Expansion aspirations were outlined in Plan Change 31 and the District Plan Review.



sales) growth beyond those years even with the proposed Ōhoka commercial centre fully operational due to ongoing growth in Mandeville centre's trade catchment.⁴²

- The gravity model indicates that the Mandeville LCZ is the only centre likely to experience more than minor direct trade competition effects on food, grocery and liquor retail (not to be confused with impacts on centre viability and amenity, discussed further below).
- Mandeville and Ōhoka are expected to have some trade catchment overlap and that the Mandeville and Ōhoka communities (present and future) are likely to benefit from having two centres as a result of the proposed Ōhoka Residential Subdivision, rather than just the one small LCZ at Mandeville. This includes more choice and potentially a bigger mix of activities locally available. By 2028, the modelling indicates that locally available food, grocery and liquor employment could be 36 MECs greater across the combined centres than in 2026 in net terms under scenario 1 (i.e., the addition of employment in Ōhoka, less the reduction in employment in Mandeville is still net growth).
- A reduction of sales equivalent to 7–10 jobs in 2028 in the FreshChoice (compared to expected 2026 employment), or spread over the FreshChoice and any new food, grocery and liquor stores that may appear in the Mandeville centre extension in the short-term future, does not necessarily equate to actual job losses. There are other ways that store owners can respond to a drop in demand, including reducing staff hours or operating at a lower but still viable productivity rate.
- Savvy considers that such short-medium term (temporary) impacts would not necessarily lead to any store closures in the Mandeville centre (and particularly no closure of the FreshChoice). The submission by Mandeville Village Limited Partnership on the recent District Plan Review indicated that the centre was performing above expectations. It is therefore likely that it can absorb some trade competition and will be more resilient if expanded by the time the proposed centre in Ōhoka is trading as it will have a moderately larger and more diverse role.

As noted, these distributional effects were tested using a 'spending' household range in the proposed development of between 850 and 960. This is slightly conservative relative to the final dwelling yield of the Fast Track application, where spending households may indicatively have ranged from 875 (excluding the retirement village) and 1,020 (including the retirement

⁴² This includes the additional land identified for growth in Swannanoa as LLRZO in the PODP which is a short distance to the west of Mandeville.



village but excluding some resident households that are not in independent living units and not self-catering for their food and drink).

Had the alternative household projections been updated to reflect these slightly higher figures, the modelled impacts on Mandeville Centre would not change. This is because the model already tested the maximum impact on Mandeville, by drawing all available Mandeville-Ōhoka SA2 growth (as projected by SNZ) to the development (and proposed centre) and redirecting some existing Ōhoka resident convenience spend to the proposed centre. Increasing the dwelling yield does not change those two parameters.

Rather, the increase in spending households in the proposed subdivision is assumed to reallocate slightly more growth from other nearby SA2s, which, all else being equal, is likely to make a negligible reduction in spend directed to other centres in Waimakariri District. As those centres have been shown to have minor, or less than minor impacts from the proposed project, the further adjustment of dwelling yields would not have altered those conclusions on direct impacts.

2.3.9 Cumulative Effect of Total Retail, Commercial and Community/Health Supply in the Proposed Centre

The gravity modelling carried out for this report has focussed (appropriately in Savvy's view) on the potential effects of the proposed commercial centre in terms of its reasonably expected food, grocery and liquor retail floorspace (inclusive of the centre's likely anchor store) on the wider centre network. However, there is additional ground and potentially first floor business GFA estimated to be supplied in the proposed centre (totalling an indicative 9,390sqm) which is anticipated as:

- other forms of convenience retail (including hospitality) up to an estimated 2,410-2,660sqm GFA,
- commercial services and other commercial (including potentially visitor accommodation) up to an estimated 3,760sqm GFA,
- community (i.e. day care) and health activity (including potentially a medical centre and vet clinic) up to an estimated 1,880sqm in keeping with the role of local centres and Ōhoka context.

These activities would all be enabled in the proposed development standards (within size limits). Effects arising from this additional activity may be felt across the centre network depending on what activity is included in different centres and the scale and mix of the new activity supplied. For example:



- other business floorspace in the proposed commercial centre will not further impact Countdown Rangiora as the supermarket makes up 90% of the employment on that site.
- Remaining retail floorspace in the proposed local centre (which will be mainly small-scale retail) would be highly unlikely to have any material impact on the district's large format retail zones.
- A vet clinic or a medical centre (for example) would have no impact on Mandeville as the centre does not (currently) contain those activities.
- A shared office space (for example) may just provide a communal area for current/future residents that would otherwise work from home and does not draw business/employment away from other centres.
- A motel located in the proposed commercial centre (for example) would increase visitor accommodation capacity in the district and compete with existing motels that are more commonly located in residential areas (not centres) at present.

Where there is direct competition, Savvy expects that other retail and commercial employment impacts on the centre network would be no greater in percentage terms than the food, grocery and liquor impacts of the proposed development under scenarios 1 or 2 in 2028 (compared with that same year in the status quo). Impacts on TCZs would be less than minor. Further, strong growth in demand across the district is likely to offset any and all impacts arising from the proposed commercial centre such that centres show continued employment growth across all store types even with the proposed commercial centre included in the centre network.

Savvy estimates that the total employment impact (as a proxy for sales) of the proposed commercial centre on the Mandeville LCZ in the first year of trading to be no greater than the percentage impact felt by the food, grocery and liquor stores (i.e. a 21-29% reduction in 2028 relative to expected 2026 employment). This is on the basis that the centre achieves an overall GFA of around 9,390sqm GFA and because functional amenity of the centre is enhanced by having a mix of activities take up that reasonably expected GFA, not all of which will compete with supply in Mandeville.

Overall, the impact of the proposed commercial centre on all current and potential additional stores in Mandeville would be offset by catchment growth over time according to model findings. Savvy does not anticipate any store closures from that level of direct trade impact and considers that any reduction in the overall amenity, vibrancy and vitality of the Mandeville centre would likely be minor.



2.4 Summary of Potential Distributional Effects

Adverse distributional effects on centres are not measured according to the direct sales/employment impacts indicated by the outputs of a gravity model, but rather the consequent effects of changes in demand on a centres' overall vibrancy, viability and amenity. None of the food, grocery and liquor employment impacts on the wider centre network, including TCZs, modelled for the proposed commercial centre are of a level that would cause adverse distributional effects on those centres.

While unmodelled, Savvy considers that when other retail, commercial and community/health activities are included in the proposed commercial centre scenario, that the distributional effects on the wider centre network will still be less than minor and quickly offset by strong district growth.

While the direct trade competition impacts on the Mandeville centre are more substantial in percentage terms than other centres, Savvy considers that they would not result in a more than minor impact on the overall viability, vibrancy and amenity of the Mandeville centre in the short-medium term. While the overall scale of the proposed Ōhoka commercial centre would be larger than the Mandeville centre (which is small in the context of the LRZ in the PODP), no closure of the FreshChoice supermarket, or other existing businesses like the childcare centre or take away food stores, is anticipated.

Savvy has considered these potential impacts under circumstances where the proposed commercial centre is developed in its entirety between 2028 and 2030 and with dwelling growth in the residential subdivision occurring at a rate faster than current growth projections for the area. In other words, a substantial shock of additional supply in the centre network has been tested and has still shown an acceptable level of adverse economic effects on the closest centre (Mandeville). If development of the proposed commercial centre was staged and the residential development proceeded more slowly than assumed in this report, impacts on the Mandeville LCZ would be lesser again.



3 Loss of Productive Capacity

The National Policy Statement on Highly Productive Land (NPS-HPL) does not apply to the proposed development on the basis that the underlying zone in the PODP is a Rural Lifestyle Zone (notified prior to the NPS-HPL taking effect) and not a general rural zone or rural production zone. The NPS-HPL does still apply elsewhere in the district (in the General Rural Zone). Notwithstanding that, the site contains LUC 2 and 3 land⁴³ and is currently being used for dairy farming and cattle breeding. The development of the site will result in a loss of land-based primary production capacity. This is an economic cost and is appropriate to quantify where practicable.

3.1 Loss of LUC 1-3 Land

The NPS-HPL provides an interim definition of highly productive land (HPL) until such time as the Canterbury Regional Policy Statement maps HPL. This interim definition applies to all land that is LUC 1-3 and that falls within a rural zone or rural production zone. Notwithstanding that HPL may not be limited to LUC 1-3 land (when assessed in more detail), and not all LUC 1-3 land is necessarily highly productive for land-based primary production, Savvy has carried out some spatial analysis to put the loss of the development site's LUC 2 and 3 land into context at a district level.

Figures 3.1 and 3.2 illustrate the location of LUC 1-3 land in Waimakariri District at a broad and narrow extent. Care is needed as the spatial dataset (LRI) of LUC 1-3 land was based on data that pre-dated areas of urban development in the district. Land developed (and zoned for) urban development permanently locks up the soil/land from being used for land-based primary production. So, while the dataset indicates 95,070ha of LUC 1-3 land in Waimakariri District (one of the highest of all territorial authorities):⁴⁴

- Around 63% (60,000ha) falls within the PODP General Rural Zone (and therefore qualifies as HPL under the NPS-HPL). LUC 1-3 land makes up 40% of the PODP Rural Zone.
- Around 29% (27,000ha) falls within the PODP Rural Lifestyle Zone (as notified) and does not qualify as HPL under the NPS-HPL but may still support some forms of primary

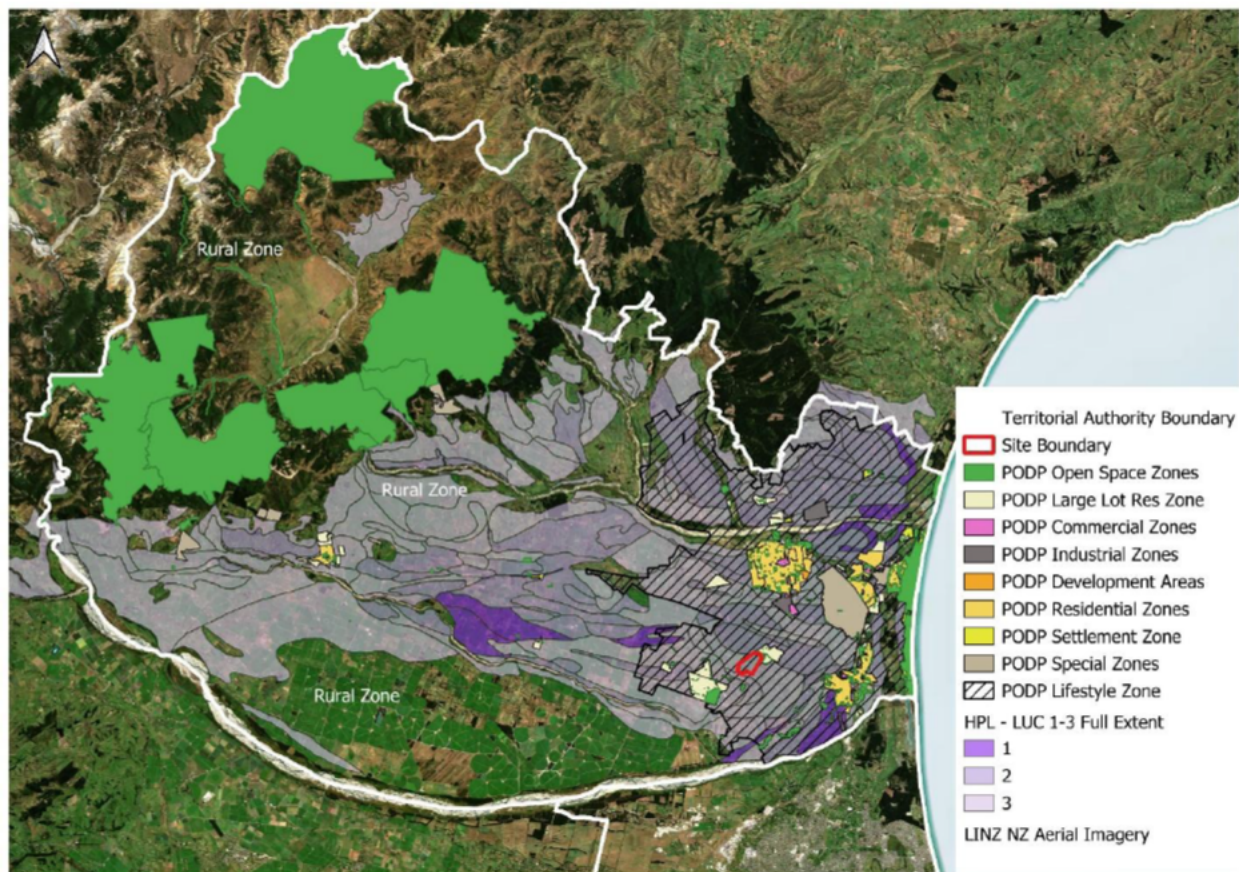
⁴³ Albeit, the Government has announced that it will remove LUC3 land from the constraints within the NPS-HPL in 2025 (See: <https://www.beehive.govt.nz/release/government-support-greenfield-housing>).

⁴⁴ The following calculations were based on the notified PDP zoning and not the PODP zoning. The differences in zoning only have a marginal impact on these results and do not alter the conclusions.



production at various scales on land not occupied by roads, driveways and buildings. LUC 1-3 land makes up around 84% of the PODP Rural Lifestyle Zone.

Figure 3.1 – Total Extent of LUC 1-3 Land in Waimakariri District with PODP Zoning



- Around 8% (7,600ha) falls under other urban zones (including Special Zones and Open Space Zones) and is unavailable for land-based primary production (or would be once this land is developed for its zoned purpose).

The site comprises mainly (98.1% or 151.56 ha) LUC 3 land according to the NZLRI 2021 dataset, and a small area of LUC 2 land (1.9% or 2.86ha). The loss of this land for proposed development equates to:

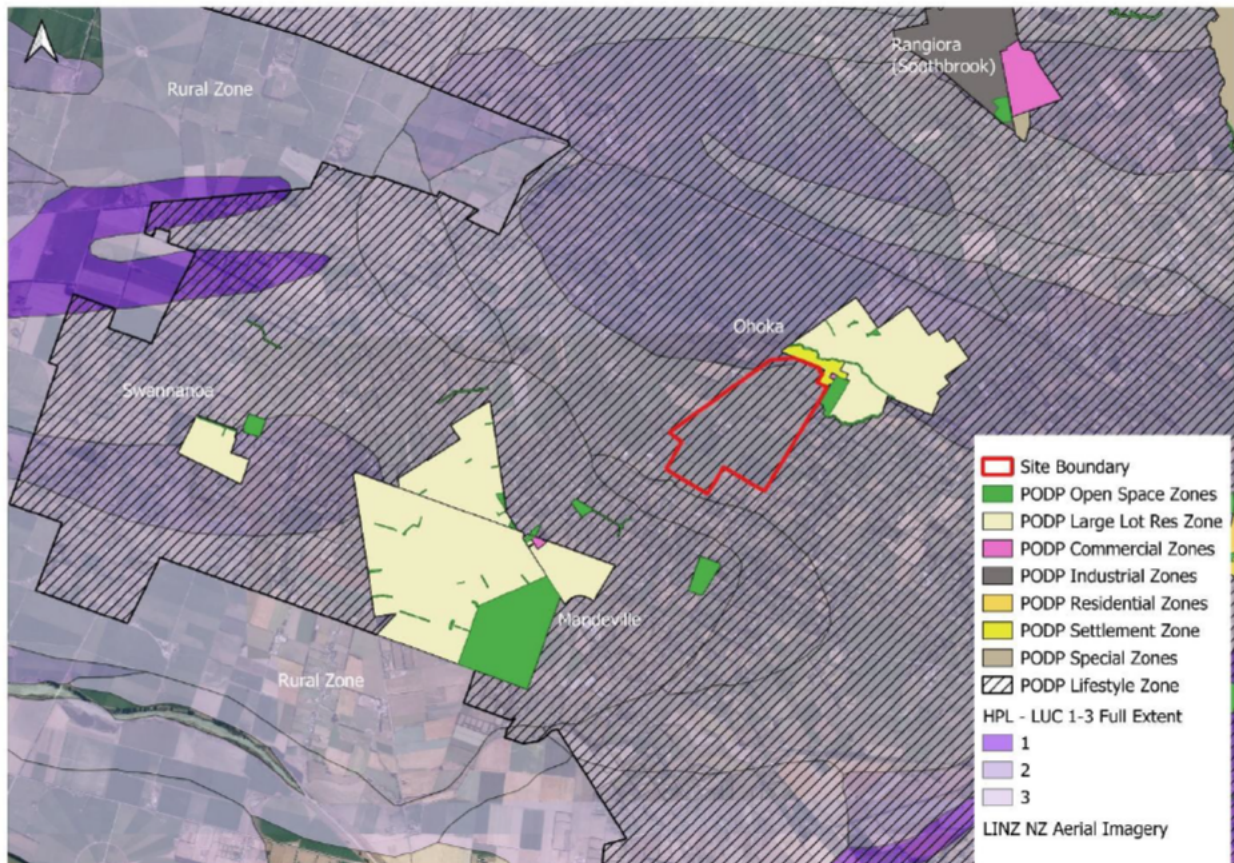
- A 0.02% reduction in LUC 2 in the district, and
- A 1.2% reduction in LUC 3 in the district, and
- A 0.6% reduction in total LUC 1-3 land located within the Rural Lifestyle Zone.

As discussed above, the proposal site is not within HPL as defined in the NPS-HPL, so development of the site does not represent a loss of HPL in that context. To give a sense of the scale of qualifying HPL in the district, the site contains the equivalent of 0.02% of the LUC 2



land, 0.34% of the LUC 3 land and 0.26% of the total LUC 1-3 land located in the General Rural Zone.

Figure 3.2 – LUC 1-3 Land in the Ōhoka–Mandeville Area with PODP Zoning



Due to the significant amount of LUC 1-3 land contained in the district outside of urban zones or qualifying as HPL under the NPS-HPL in the General Rural Zone, the loss of the productive capacity of the site – when measured just in terms of the reduction in productive land area – is considered negligible.

3.2 Loss of Land-Based Primary Production

The Reeftide Report provides a description of current productive use on the site (a mix of dairy farming and cattle breeding, with irrigated paddocks). It also describes the key constraint of the site being a high water table and soil wetness/poor drainage, which would limit many types of crops (as an alternative use of the land), and already imposes some restrictions on current farming activity during the wetter seasons. Further drainage would be needed to use the land for cropping or more intensive stock grazing. Another constraint that would limit some forms of more intensive primary production on 6.23ha of the site is the overlap with the Drinking Water Protection Zone.



The Farm Report also confirmed that the soil type, climate and proximity to residential dwellings would constrain the site from being viably used for “*high value perennial crops such as pip fruit, summer fruit, berry fruit or viticulture*”. That report assessed three “*productively viable land use options*” for the effective farming area (being around 139ha once other natural/retained features are accounted for). These include either of the current uses (livestock trading such as cattle breeding and dairy farming), and an alternate use spring-sown vegetable production (which avoids the risk of waterlogged soils in the winter).

The Farm Report considered that while each of these three use options were productively viable, they were not economically viable over the long term as the high value of the land (and other capital costs) meant that an investor looking to use the land for primary production would not meet the minimum return on capital threshold of 4%.

With this in mind, Savvy has modelled the lost productive capacity of the site based on its current use over the long term. That is, business-as-usual operation of dairying and cattle trading. Continuation of an existing farming operation (at the scale and intensity of current use) is expected to avoid some of the capital costs that would be faced from a profit driven investor ‘starting from scratch’ on the land. Savvy acknowledges that the land is under contract (to be purchased by Carter Group at market value), but for the sake of quantifying the loss of productive capacity (economic contribution) generated by the land, Savvy has essentially wound the clock back. This assumes that farming of the land up to this point has been sufficiently economically viable to the present owner (in terms of income) and would continue to be so over the long term (albeit that the Farm Report cautioned that dairy and cattle farming on the land risked becoming less productive over time because of reverse sensitivity effects).

3.2.1 Economic Impact of Dairy/Cattle Farming

In the absence of any actual figures from the current or past landowner, the following is a desktop analysis based on available data and assumptions. Savvy has adopted the farm area split between the dairy block (111ha) and the breeding block (41ha) from the Soils Report.

Table 3.1 contains data on annual gross output (revenue) per hectare for two types of sheep and beef farming operations that apply in the Canterbury Region. The examples include Finishing/Breeding farming and Mixed Finishing farming. These farms are assumed to be more reliant on irrigation to support intensive grazing (and feed crops) during certain times of the year. These are considered broadly comparable to the activity occurring on the site (in conjunction with the dairy farming activity). The annual average gross output per ha of these Canterbury sheep and beef farms ranges from \$1,507/ha (low) up to \$3,597/ha (high). Applied



to the 41ha stated as being used for the breeding block on the site, the total annual gross output of that portion of the farm is estimated at between \$61,800 (low) and \$147,500 (high).

When the sheep and beef farming direct, indirect and induced value added and employment multipliers are applied to that gross output, the total annual value added contribution of the beef breeding activity on the site is estimated at between \$60,200–\$143,700. This is an upstream economic impact and does not capture any downstream economic impacts. The total employment impact for the cattle breeding activity is negligible.

Table 3.1 also contains data on annual gross output per hectare for dairy farming. This is a bottom up estimate derived from dairy sector statistics for the Waimakariri District. Two approaches have been tested. One applies a local milk solids kg/cow ratio (applied to a dairy herd of 170 according to the Soils Report), and the other applies a local milk solids kg/hectare (applied to a dairy block area of 111ha). For both approaches, the 2023/24 average revenue per kg of milk solids of \$8.90 applies. When these assumptions are applied, annual gross output for the dairy farming activity on the site ranges between \$670,300 and \$1,421,600. When gross output is expressed on a per hectare basis, it shows that dairy farming generates much higher revenue than cattle breeding (although in this instance, both activities are complementary).

Table 3.1 – Estimated Economic Contribution of Primary Production on the Site (Beef Farming/Dairy Farming)

	Farm Type Category	Mean Gross Output/ha per annum	Farm Area (ha, apportioned) **	Gross Output Per Annum (\$)	Total Annual Value Added (\$)	Total Annual Employment (FTES)
A	Class 6 South Island Finishing/Breeding*	\$ 1,507	41	\$ 61,800	\$ 60,200	0.4
B	Class 8 South Island Mixed Finishing*	\$ 3,597	41	\$ 147,500	\$ 143,700	0.9
C	Dairy Farming (Revenue/cow (n=170)) ***	\$ 6,039		\$ 670,300	\$ 664,200	3.7
D	Dairy Farming (Revenue/ha) ***	\$ 12,807	111	\$ 1,421,600	\$ 1,408,800	7.7
	Total Farm Operation (A+C)			\$ 732,100	\$ 724,400	4.0

* Source of Gross Output/ha: *Survey Quintile Analysis (Sheep and Beef Farms in Marlborough/Canterbury)*. Based on 2019/2020 farm revenue statistics.

** Based on Soils Report.

*** Inputs Source: Dairy data sources: NZ Dairy Statistics 2023/24, DairyNZ

Direct, Indirect and Induced Multipliers sourced from *Insight Economics (National Multipliers 2020)*

When the dairy farming direct, indirect and induced value added and employment multipliers are applied to that gross output, the total annual value added contribution of the dairy farming activity on the site is estimated at between \$664,200–\$1,408,800. Again, this is an upstream economic impact and does not capture any downstream economic impacts (of which dairy processing contributes approximately 40–45% of the GDP contribution that dairy



farming contributes to the economy).⁴⁵ The total employment impact for the dairy farming activity is still very minor at between 4–8 total direct and upstream jobs sustained per annum.

Table 3.1 includes a combined farm impact. Savvy has combined the Finishing/Breeding farm results with the dairy farm results based on the per cow ratios. The former is selected because it most closely aligns with the activity described on the site. The latter is selected based on a comparison of the herd size and dairy block land size relative to other Waimakariri District dairy farm statistics.

DairyNZ reports that in the district, the average effective dairy farm size is 214ha and the average dairy herd size is 696 cows. This is an average stocking rate of 3.25 cows/ha. By contrast, the dairy farming on the site has a stocking rate of 1.53 cows/ha.⁴⁶ Savvy considers that this is a likely indicator of the constraints faced by this site, with the wet soils in winter limiting the size of the herd that can be effectively managed. The land is not as productive as the district average for dairy farms, and for this reason, the milk solids kg/cow ratio is considered the most appropriate to use to estimate gross output and total value added economic impacts.

The combined cattle breeding and dairy farming activities on the site are therefore estimated to generate total annual gross output (direct) of \$732,100. When the flow-on economic impacts are calculated, this is estimated to contribute \$724,400 in total value added per annum and sustain 4 FTEs per annum. Over a 30-year period, and assuming no change in output, prices or multipliers, this would be a cumulative economic impact of \$21.7 million in value added to the Canterbury Region economy.⁴⁷ In net present value terms (8% discount rate), this long term cumulative value added impact equates to \$8.16 million.

The loss of this annual productive activity from the site is considered negligible in the context of the district and Canterbury Region economy. Put another way, the site's dairy herd (170 cows) makes up 0.25% of the total dairy herd reported in the Waimakariri District reported in 2023/24 by DairyNZ. The loss of this dairy herd would reduce the total number of dairy cows in Canterbury Region by 0.018%. As such, the impact on the dairy sector would be almost indiscernible at the region level.

⁴⁵ Source: Sense Partners. Solid foundations – Dairy's economic contribution to New Zealand, September 2023.

⁴⁶ 170 cows on a 111ha dairy block.

⁴⁷ Undiscounted to present values. Total economic impacts should be considered as a theoretical upper limit.



3.3 Summary of Lost Productive Capacity

The Reeftide report considers that the proposed development would have “*minor adverse effects in terms of the loss of productive land*” (page 5). Having quantified the relevant areas of productive land (as defined by LUC 1-3 area), Savvy considers the actual loss of productive land is less than minor and considers the loss negligible at the district level.

The Farm Report provides assessment of the economic viability of three different primary production uses of the site. Above, Savvy does not directly consider economic viability (profitability), but rather the indicative economic impact of the current farming activity on the site. This is on the basis that the current activity (a mix of dairying and cattle breeding) has been demonstrated to be sustainable in the past and is therefore the most likely land use option to be sustainable in the future.

Based on the estimated direct, indirect and induced value added and employment contribution that the current farming activities make to the economy each year, Savvy considers that the loss of this primary production activity from the site (through residential and commercial development) would, at an annual contribution to total value added of \$0.72 million and a net present value over 30 years of \$8.16 million) also have a negligible adverse effect on the regional economy.



4 Other Economic Disbenefits

4.1 Other Economic Disbenefits/Opportunity Costs

This sub-section considers the potential for any other economic disbenefits or opportunity costs of the proposed Ōhoka Residential Subdivision.

It is important to understand the counterfactual scenario of where household growth would likely occur if the project is not approved and delivered. This is because there may be economic disbenefits of that status quo household growth pattern⁴⁸ that are not materially different from meeting more of that growth in the Ōhoka settlement.

As discussed in section 2.2.3 of this report (refer page 17 and the end of page 18), Savvy has assumed that the Ōhoka Residential Subdivision will serve a sub-market of housing demand that is seeking:

- larger residential sections (relative to those expected to be delivered in the main urban townships under current planning provisions); and
- in locations near to, but outside of the main urban townships in the south-east of the district. That is, households that may have been expected to seek a location in one of the settlements contained within the Greater Christchurch Urban Environment, of which Ōhoka is one of several options.

The retail distributional effects modelling articulates this through a scenario where a portion of status quo household growth projected in such settlements (SA2s) in the south-east of the district is attracted to Ōhoka as a result of the supply of residential sections and associated amenities offered by the proposed master planned development. That is, growth is reallocated to Ōhoka – sustaining a faster than projected household growth rate in that locality.

On that basis, many economic disbenefits that may typically be associated with household growth outside of the main urban townships (which is still a legitimate pathway of growth that meets certain household needs and therefore still supports a well-functioning urban environment) will be neutral in effect. This is because the project simply transfers some of that demand from one part of the Greater Christchurch Urban Environment outside the main

⁴⁸ It is outside the scope of this report to examine if there is sufficient residential capacity to accommodate status quo household projections in each of the settlement areas of the Greater Christchurch Urban Environment.



townships to another (i.e., Ōhoka) where it has similar levels of proximity and access to those main townships and Christchurch City.

For example, adverse economic effects such as lost productivity from longer commutes, reduced labour market efficiency at a district scale (i.e. increased car-dependency and associated household travel costs given that the key employment areas are in the main townships else in Christchurch City), wear and tear on roads outside the main townships caused by household growth in those locations, or risk of undermining planned or staged urban growth strategies (including efficiency, viability and sequencing of urban growth), are all neutral in Savvy's view as they would be expected to occur (at the same or materially similar level) in the counterfactual (and assuming that there was capacity in those areas to meet that status quo projected demand).

That said, the following discusses three potential economic disbenefits that are location specific and/or attributable to the Project (i.e. that would not be expected to occur under the counterfactual):⁴⁹

- *Underperforming Council assets due to potential changes in household location preferences.* I.e., slower cost recovery on any existing or planned council infrastructure in locations where demand is expected to be redirected from (i.e. other settlements in the south-east of the district outside the main townships). It is outside the scope of the Savvy report (and the wider application) to substantiate if this situation is likely to apply or not. It is included (for completeness) as a potential economic disbenefit for Council and the community that may be felt over the medium term.
- *Any full lifecycle costs (such as long-term infrastructure and maintenance liabilities) to Council and the community for infrastructure needed to service the Project that is not fully recovered by development contributions or rates income.* Infrastructure requirements for the Ōhoka Residential Subdivision have been addressed in other technical reports which conclude that the proposed infrastructure to service the proposed subdivision can be established without causing unacceptable adverse effects. As such, the risk of this disbenefit occurring is considered low.
- *Concentrating relatively more growth outside the main urban townships in the Ōhoka location will concentrate primary school demand at Ōhoka Primary (the nearest school) rather than potentially more dispersed growth which may have been spread over multiple primary schools.* Dispersed growth may or may not have been more easily absorbed by the existing school network. Ministry of Education roll count data

⁴⁹ This list may not be exhaustive but is likely to capture the most likely economic disbenefits. Other externalities or disbenefits (biophysical, social and cultural) are covered by other technical reports).



shows that between 2020 and 2025, primary schools⁵⁰ in Waimakariri District experienced just a 1% roll increase, with 13 primary schools showing declining rolls and 11 showing positive roll growth. Growth was concentrated in four primary schools, with Ōhoka being the fourth fastest growth primary school in the district in percentage and absolute terms (i.e. growth of 61 students or 39% since 2020). It is outside the scope of this report to determine if the Project might stimulate an unplanned capacity upgrade at Ōhoka Primary (and the scale of the net additional school roll that may ensue over time as a result of the Project), although I understand that this issue of primary school roll projections is addressed in the AEE. There may be social costs *if* the Ōhoka Primary School's resources are stretched (i.e. if capacity does not increase commensurate to any increase in demand). There may also be economic costs for the Ministry of Education (i.e., taxpayers) if the project triggers investment in Ōhoka Primary that is net additional of already planned primary school investment in the Waimakariri District to meet expected school roll growth.⁵¹ Such outcomes are uncertain and unquantified. Ministry of Education costs are shared across all taxpayers in New Zealand.

Overall, the extent of these potential economic disbenefits – some of which are uncertain in their applicability and all of which are unquantified – are focussed at the district level, with no regional economic disbenefits expected to apply. They may be felt over the medium or long term (if at all) and are estimated to have, at most, a less than minor adverse effect on economic wellbeing in Waimakariri District.

4.2 Other Project Impacts

Actual or potential **economic** costs and disbenefits of the Project are not the only adverse impacts to be considered in the proportionality assessment under s 85(3) of the Act. For example, Savvy acknowledges that there will be a net loss of archaeological value for the site (after applying mitigation and management measures) caused by land development outside of the proposed heritage reserve. Further, there will be a gross loss of 3.5ha of wetlands on the site, albeit that restoration and enhancement of retained higher-value wetlands is also proposed along with creation of new riparian wetlands and construction of wetland habitat in stormwater management areas which it intended to offset the gross wetland loss and result in a net increase in ecological function on site.

⁵⁰ Includes full primary and two composite schools which cover full primary and junior secondary years.

⁵¹ While uncertain, it is also possible that concentrating relatively more household growth outside the main townships in Ōhoka than otherwise projected may result in cost savings for the Ministry of Education if the counterfactual was likely to be small upgrades across a number of schools. That is, there may be savings from economies of scale.



These other impacts are addressed in detail in the technical reports by Underground Overground and Instream Consulting/Stantec respectively. Both these Project impacts are non-market effects (i.e. they relate to changes to non-market goods and services including ecosystem services provided by wetlands and intrinsic and social values (including sense of place) provided by heritage features).

While there are economic methods such as stated preference methods⁵² and revealed preference methods⁵³ that can help to monetise such impacts, such assessments are complex, costly and time consuming and go beyond the scope of this report. However, some guidance can be taken from existing research. For example, Patterson and Cole's 2013 New Zealand based research⁵⁴ estimated that wetlands have on average a net non-market use value of \$₂₀₁₂30,900 per ha.⁵⁵ Where the wetland area proposed to be removed on the site sits on the spectrum of wetlands covered by Patterson and Cole's national research is unknown, but this would influence its estimated value per ha relative to that average. Nonetheless, applying the average use value of \$30,900 per hectare to the unmitigated loss of 3.5ha of wetlands on the site would have an indicative use value of \$₂₀₁₂108,150.⁵⁶

Savvy has not attempted to search for any existing research that might help to estimate the monetary value of the loss of archaeological value on the site from the Project but considers that such an exercise would be fraught and lack even more specificity to the site's heritage context. Savvy notes that the Underground Overground report concludes that retention of part of the archaeological site within a dedicated heritage reserve will help minimise the loss of archaeological values and enhance public amenity. Archaeological monitoring, recording, investigation, interpretation, and reporting will further partially mitigate adverse effects; however, residual loss of archaeological value will remain. Savvy understands these impacts to be ultimately necessary to facilitate the broader benefits of the Project.

Overall, Savvy considers that any biophysical, archaeological or other impacts of the Project are best evaluated using the qualitative technical reports of the relevant experts rather than

⁵² Stated preference methods use surveys to elicit hypothetical willingness to pay to avoid an effect or a protect a particular value. An example includes contingent valuation surveying.

⁵³ Revealed preference methods infer values from observed behaviour in related markets. An example includes hedonic pricing methods.

⁵⁴ Patterson MG, Cole AO 2013. "Total economic value" of New Zealand's land-based ecosystems and their services. In Dymond JR ed. Ecosystem services in New Zealand – conditions and trends. Manaaki Whenua Press, Lincoln, New Zealand.

⁵⁵ Based on a net value of \$5,122 million and 166,000 hectares of wetland estimated in New Zealand at that time.

⁵⁶ This does not account for the non-use (passive) values of the 3.5ha of wetland – being the option, existence and bequest value.



attempting to quantify them in economic (monetary) terms where the richness of those assessments would most likely be lost. This extends to:

- the assessment of traffic impacts by Novo Group (who concluded that traffic effects on the wider network would be acceptable with appropriate mitigation, including timely implementation of infrastructure upgrades and changes to the State Highway 1/ Tram Road interchange signal phasing); and
- the assessment of infrastructure impacts and requirements assessed by Inovo (who concluded that there would be no significant adverse infrastructure effects and that vehicular and foot traffic, three waters and utility servicing for the proposed development could all be managed with conventional methods).



5 Conclusions on Economic Costs

There are two key economic costs of the proposed Ōhoka Residential Subdivision: potential adverse distributional effects on existing centres arising from the commercial centre (estimated to deliver around 9,390sqm GFA of business floorspace), and the loss of productive land and primary production activity.

Given the housing densities and potential dwelling yield proposed for the Ōhoka Residential Subdivision, provision of a local centre as part of the development is a key opportunity to ensure that residents in the site, the existing Ōhoka settlement and the adjacent areas have their supermarket and other convenience retail and service (including health) needs met in an efficient and effective manner. It is also an opportunity to establish a community focal point for the Ōhoka settlement, with associated amenities such as the potential for a market square and additional parking to support the Ōhoka Farmers Market.

Adverse distributional effects on centres are not measured according to the direct sales/employment impacts indicated by the outputs of the gravity model, but rather the consequent effects of changes in demand on a centres' overall vibrancy, viability and amenity. The gravity modelling is used to gauge this broader amenity impact.

Mandeville is a small LCZ that is a relatively close distance to the south of Ōhoka. Data indicates that it is currently utilised by existing Ōhoka residents for some of their convenience retail, food and beverage and childcare centre needs. Ōhoka makes up only a portion of the Mandeville centres current trade catchment (total customer base), and it is this portion of trade catchment (spend) that would be expected to switch (not necessarily entirely) to the proposed commercial centre due to greater accessibility and convenience. As such, economic effects on the Mandeville centre required careful consideration.

Based on comprehensive assessment, Savvy considers that none of the short-lived and minor food, grocery and liquor employment (as a proxy for sales) direct trade impacts on the wider centre network, including Mandeville LCZ, modelled for the proposed commercial centre are of a level that would cause any more than minor adverse distributional effects on those centres.

When extrapolating those direct trade impacts over the total potential business floorspace of the proposed commercial centre (tested under a fairly rapid and early centre build-out relative to residential staging in the proposed subdivision), Savvy maintains its view that any adverse distributional effects on the wider centre network would be less than minor, and for Mandeville, no more than minor (and recoverable over time).



While the proposed Ōhoka Residential Subdivision will result in the permanent loss of LUC 2 and 3 land Waimakariri District, the loss (for current and future generations) is negligible when measured against the total LUC 1-3 land exists in the district. Under the NPS-HPL, the proposal does not impact the approximate 60,000ha of HPL that exists in the district in the PODP Rural Zone – one of largest areas of HPL in the country.

The site is used for land based primary production at present. This comprises a mix of dairying and cattle breeding. The main physical constraint facing the site is the potential for water-logged soils in winter. This potentially explains the lower dairy cow stocking rate (per hectare) sustained on the land relative to the district average. Having estimated the gross output of this status quo farming operation and the total direct and flow-on value added and employment contribution of that activity, Savvy considers that the loss of this economic activity on the regional economy would be negligible.

Other potential (but uncertain) economic disbenefits attributable to the proposal are identified as inefficiencies in the allocation of existing or planned network infrastructure in other settlements (outside of Ōhoka) where more household growth may have been otherwise expected in the medium term; any risk of long term financial costs to Council of vested infrastructure not mitigated by development contributions and future rates income; and any unplanned costs to cater for roll growth at the Ōhoka Primary School associated with growth in the size of the Ōhoka community over the medium term. While unquantified, such economic disbenefits, if applicable, are estimated to have a less than minor adverse effect on economic wellbeing in Waimakariri District.

Overall, the actual and potential economic costs and disbenefits of the proposed development are considered to range from less than minor to minor when assessed at the relevant spatial extents.



Appendix 1 – CV

I (Natalie Hampson) am the owner and director and Savvy Consulting, which was established in November 2023. Prior to establishing Savvy, I was a director at Market Economics Limited. I have worked in the field of economics for over 25 years for commercial and public sector clients with a particular focus on economic assessment within the framework of the Resource Management Act (RMA). Since 2001 I have specialised in studies relating to land use analysis, assessment of demand and markets, the form and function of urban economies and growth, policy analysis, and evaluation of economic outcomes and effects, including costs and benefits.

I have considerable experience assessing economic costs and benefits of proposed plan changes, district plan reviews, structure plans, resource consents, fast track applications and policy proposals throughout New Zealand. I have been heavily involved in the preparation of HBAs in Rotorua and Queenstown. I have been contracted to provide inputs to (and peer review of) future development strategies. I was the co-author of the Section 32 assessment and Cost Benefit Analysis (CBA) for the proposed NPS-HPL. I was the author of the CBA for the proposed NPS-Indigenous Biodiversity and amendments to the NES- Plantation Forestry.

My recent experience in Greater Christchurch includes (but is not limited to):

- Evidence on behalf of 5 submitters in the Waimakariri PDP hearings.
- Evidence on behalf of 2 submitters in the Christchurch City PC14 hearings.
- Evidence on behalf of 2 submission on the Selwyn District PDP hearings (industrial and LFRZ)
- Evidence on behalf on an appellant on the Selwyn District PDP (residential and commercial).
- Resource consent applications for Halswell North and North-West Belfast commercial centres. Various other commercial and residential consent application in Christchurch.
- Multiple industrial plan changes and one residential plan change in Christchurch City.
- Assessment/evidence/advice to Christchurch International Airport Limited and Lyttelton Port Limited.

Savvy is providing economic assessment support to a range of Fast Track applications in the South Island. Natalie was on the expert Panel for the Taranaki VTM Fast Track application.



Appendix 2 – Status Quo & Alternate Household Growth Scenarios

Waimakariri Statistical Area 2 (SA2)	Status Quo		2026 to 2043 Household Growth				
	2026 Households	2043 Households	Status quo	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Mandeville-Ohoka	1,250	1,670	420	850	960	850	960
Waikuku	1,170	2,350	1,180	1,100	1,080	1,180	1,180
Pegasus	1,320	1,740	420	360	340	420	420
Rangiora South East	1,240	1,590	350	300	280	350	350
Rangiora North West	1,220	1,410	190	140	130	190	190
Fernside	730	1,400	660	610	600	660	660
Kingsbury	1,230	1,360	120	80	70	120	120
Clarkville	580	730	140	110	110	140	140
Oxford Estate	560	680	110	80	80	110	110
Pegasus Bay	540	650	100	80	80	100	100
Swannanoa-Eyretton	370	460	80	70	60	80	80
Tuahiwi	370	430	60	40	40	60	60
Ashgrove	750	880	130	130	130	130	130
Ashley Gorge	550	680	130	130	130	130	130
Ashley-Sefton	1,020	1,270	240	240	240	240	240
Eyrewell	780	980	200	200	200	200	200
Kaiapoi Central	1,120	1,240	110	110	110	110	110
Kaiapoi East	160	110	50	50	50	50	50
Kaiapoi North West	950	1,050	100	100	100	100	100
Kaiapoi South	830	910	70	70	70	70	70
Kaiapoi West	540	580	30	30	30	30	30
Lilybrook	1,440	1,570	130	130	130	130	130
Loburn	900	1,180	280	280	280	280	280
Okuku	300	400	100	100	100	100	100
Oxford	1,090	1,240	150	150	150	150	150
Rangiora North East	1,060	1,530	460	460	460	460	460
Rangiora South West	1,090	1,300	210	210	210	210	210
Silverstream	600	910	310	310	310	310	310
Southbrook	350	400	40	40	40	40	40
Sovereign Palms	1,520	1,900	370	370	370	370	370
Starvation Hill-Cust	1,000	1,230	230	230	230	230	230
West Eyretton	620	750	130	130	130	130	130
Woodend	1,270	1,640	360	360	360	360	360
Total Households/ Growth	28,770	36,400	7,740	7,740	7,740	8,160	8,270
% Growth (2026 to 2043)			27%	27%	27%	28%	29%

Source: StatisticsNZ, M.E



Appendix 3 – Retail Demand Model

Savvy has used Market Economics' Retail Demand Model to estimate the current and projected household spend on Food, Grocery & Liquor retail stores at the SA2 level across the study area. In addition to household demand for these store types, there is also demand by businesses and international visitors (although these make up a minor component).

Household demand is broken down into three types of spending – household spend from home (i.e. home-based trips, and summarised in the table below), household spend from work, and household spend while travelling domestically. This analysis models household spend from home in detail, on the basis that it accounts for 91% of total household spend on food, groceries & liquor retail (national average). The additional components of demand are added using a more high-level approach.

The spending is closely aligned with the distribution of households and household growth although it captures the different mix and spending power of household types in each 2018 defined SA2 and includes an assumed 1% annual increase in real spend per household between 2021-2043.

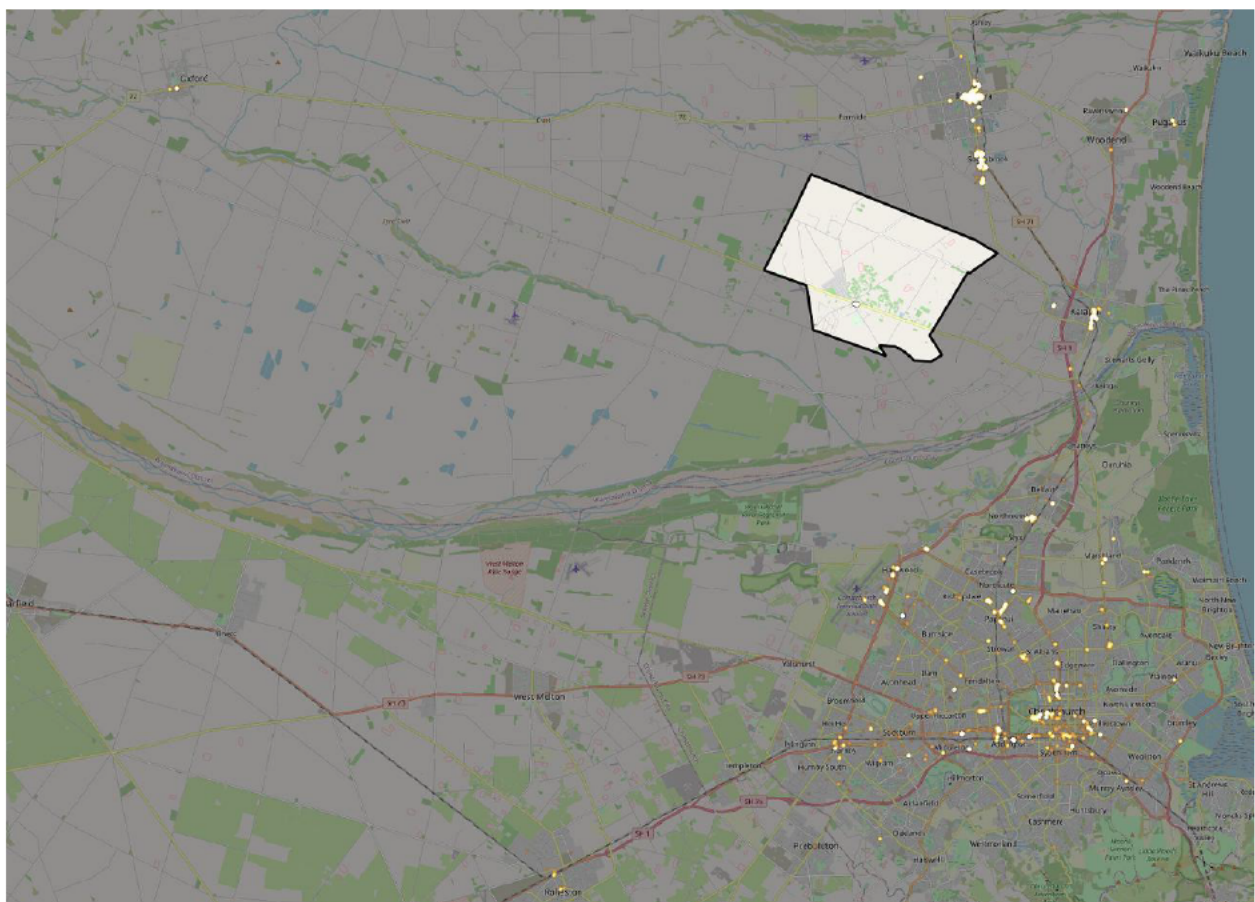
Waimakariri Statistical Area 2 (SA2)	Household Spend From Home (Status Quo Projections) - Grocery, Liquor & Other Food (\$m)										Share of Growth
	2021	2023	2026	2028	2033	2038	2043	2023- 2043 (n)	2023- 2043 (%)		
Mandeville-Ohoka	\$ 16	\$ 16	\$ 18	\$ 19	\$ 20	\$ 24	\$ 27	\$ 10.2	63%	6%	
Waikuku	\$ 9	\$ 11	\$ 13	\$ 16	\$ 20	\$ 26	\$ 32	\$ 20.8	182%	11%	
Pegasus	\$ 13	\$ 15	\$ 16	\$ 17	\$ 19	\$ 22	\$ 24	\$ 9.2	62%	5%	
Rangiora South East	\$ 12	\$ 13	\$ 14	\$ 15	\$ 17	\$ 19	\$ 21	\$ 8.6	67%	5%	
Rangiora North West	\$ 11	\$ 13	\$ 13	\$ 14	\$ 15	\$ 17	\$ 19	\$ 6.3	50%	3%	
Fernside	\$ 7	\$ 8	\$ 9	\$ 11	\$ 14	\$ 17	\$ 20	\$ 12.0	157%	6%	
Kingsbury	\$ 13	\$ 14	\$ 15	\$ 15	\$ 15	\$ 17	\$ 19	\$ 4.9	36%	3%	
Clarkville	\$ 7	\$ 7	\$ 8	\$ 8	\$ 9	\$ 10	\$ 11	\$ 3.6	50%	2%	
Oxford Estate	\$ 6	\$ 6	\$ 7	\$ 7	\$ 8	\$ 8	\$ 9	\$ 2.9	46%	2%	
Pegasus Bay	\$ 5	\$ 5	\$ 6	\$ 6	\$ 7	\$ 7	\$ 8	\$ 2.5	47%	1%	
Swannanoa-Eyreton	\$ 5	\$ 5	\$ 5	\$ 5	\$ 6	\$ 7	\$ 7	\$ 2.7	57%	1%	
Tuahiwi	\$ 4	\$ 4	\$ 5	\$ 5	\$ 5	\$ 6	\$ 6	\$ 1.9	44%	1%	
Ashgrove	\$ 7	\$ 8	\$ 8	\$ 9	\$ 10	\$ 11	\$ 12	\$ 3.9	49%	2%	
Ashley Gorge	\$ 5	\$ 6	\$ 6	\$ 7	\$ 7	\$ 8	\$ 9	\$ 3.2	54%	2%	
Ashley-Sefton	\$ 11	\$ 11	\$ 12	\$ 13	\$ 14	\$ 16	\$ 18	\$ 6.2	55%	3%	
Eyrewell	\$ 9	\$ 9	\$ 10	\$ 11	\$ 12	\$ 13	\$ 15	\$ 5.6	60%	3%	
Kaiapoi Central	\$ 10	\$ 11	\$ 12	\$ 12	\$ 13	\$ 14	\$ 15	\$ 4.0	36%	2%	
Kaiapoi East	\$ 1	\$ 1	\$ 2	\$ 1	\$ 1	\$ 1	\$ 1	\$ 0.1	-10%	0%	
Kaiapoi North West	\$ 9	\$ 10	\$ 10	\$ 11	\$ 11	\$ 12	\$ 14	\$ 3.9	40%	2%	
Kaiapoi South	\$ 9	\$ 9	\$ 10	\$ 10	\$ 11	\$ 12	\$ 12	\$ 3.3	37%	2%	
Kaiapoi West	\$ 5	\$ 6	\$ 6	\$ 6	\$ 6	\$ 7	\$ 8	\$ 1.8	32%	1%	
Ulybrook	\$ 14	\$ 15	\$ 16	\$ 16	\$ 17	\$ 19	\$ 20	\$ 5.6	38%	3%	
Loburn	\$ 10	\$ 11	\$ 12	\$ 12	\$ 13	\$ 15	\$ 16	\$ 5.6	52%	3%	
Okuku	\$ 4	\$ 4	\$ 4	\$ 4	\$ 5	\$ 5	\$ 6	\$ 2.4	65%	1%	
Oxford	\$ 10	\$ 11	\$ 12	\$ 12	\$ 13	\$ 14	\$ 16	\$ 4.7	42%	3%	
Rangiora North East	\$ 9	\$ 9	\$ 10	\$ 11	\$ 13	\$ 16	\$ 18	\$ 8.6	91%	5%	
Rangiora South West	\$ 11	\$ 11	\$ 12	\$ 13	\$ 14	\$ 16	\$ 17	\$ 6.0	52%	3%	
Silverstream (Waimakariri District)	\$ 5	\$ 5	-	\$ 7	\$ 8	\$ 9	\$ 11	\$ 5.6	0%	3%	
Southbrook	\$ 4	\$ 4	\$ 4	\$ 4	\$ 5	\$ 5	\$ 6	\$ 1.7	44%	1%	
Sovereign Palms	\$ 17	\$ 18	\$ 19	\$ 20	\$ 22	\$ 25	\$ 28	\$ 9.8	55%	5%	
Starvation Hill-Cust	\$ 11	\$ 12	\$ 13	\$ 13	\$ 14	\$ 16	\$ 17	\$ 5.5	46%	3%	
West Eyreton	\$ 7	\$ 7	\$ 8	\$ 8	\$ 9	\$ 10	\$ 11	\$ 3.7	51%	2%	
Woodend	\$ 13	\$ 14	\$ 15	\$ 16	\$ 18	\$ 21	\$ 23	\$ 9.3	66%	5%	
Total Waimakariri District	\$ 288.3	\$ 310.2	\$ 328.9	\$ 353.0	\$ 389.0	\$ 446.6	\$ 495.9	\$ 185.7	60%	100%	

Source: M.E Retail Demand Model 2023, StatisticsNZ. Excludes Rangiora Central SA2 which has not current or projected households.



Appendix 4 – Shopping Centre Visitation Patterns 2021

This map (supplied to Savvy by Market Economics) shows where a sample of mobile phone owners living in the Ōhoka-Mandeville SA2 visited over the course of a 12-month period. The Ōhoka-Mandeville SA2 is shown with a black outline. The visits are represented by dots on the map. The brighter the dots, or the larger the cluster of dots, the more visits occurred in that location. The locations are a combination of centres and other localities (including employment areas or recreational areas).





Appendix 5 – 2021 Employment in Gravity Model Centres

The following table lists the centres included in the food, grocery and liquor retail gravity model. Centres are defined at the SA1 defined which may capture employment outside of the zoned centre extent. While food, grocery and liquor retail employment is considered more likely to fall within the extent of the centre zone, other/total employment captured by the SAIs overlapping the centre zones should be used with caution as it may overstate total employment (particularly when the centre adjoins an industrial or other employment zone).

Territorial Authority	Centre Name	Total Food, Grocery, Liquor MECs 2021	Other Retail MECs 2021	Total Retail MECs 2021	Non-Retail MECs 2021	Total MECs 2021	Total Food, Grocery, Liquor %	Other Retail %	Total Retail %	Non-Retail %	Total %
Waimakariri District	Arlington	3	3	6	198	205	2%	2%	3%	97%	100%
Waimakariri District	Countdown Rangiora	125	-	125	14	139	90%	0%	90%	10%	100%
Waimakariri District	Kaipoi	96	81	177	465	642	15%	13%	28%	72%	100%
Waimakariri District	Kaipoi South Local	-	62	62	494	556	0%	11%	11%	89%	100%
Waimakariri District	Mandeville	26	4	30	70	100	26%	4%	30%	70%	100%
Waimakariri District	Ohoka *	-	-	-	64	64	0%	0%	0%	100%	100%
Waimakariri District	Oxford	45	17	62	185	247	18%	7%	25%	75%	100%
Waimakariri District	Rangiora	307	528	835	2,021	2,856	11%	18%	29%	71%	100%
Waimakariri District	Rangiora - Lilybrook	4	0	4	38	42	9%	1%	10%	90%	100%
Waimakariri District	Ravenswood	-	24	24	84	108	0%	22%	22%	78%	100%
Waimakariri District	Silverstream	-	-	-	28	28	0%	0%	0%	100%	100%
Waimakariri District	Southbrook	307	224	530	1,225	1,755	17%	13%	30%	70%	100%
Waimakariri District	Waimak Junction	-	10	10	44	54	0%	18%	18%	82%	100%
Waimakariri District	Woodend	13	9	22	73	95	14%	9%	23%	77%	100%
Christchurch City	Addington	4	50	54	1,088	1,142	0%	4%	5%	95%	100%
Christchurch City	Akaroa	19	55	75	285	359	5%	15%	21%	79%	100%
Christchurch City	Aranui	-	-	-	12	12	0%	0%	0%	100%	100%
Christchurch City	Avonhead	71	41	112	151	263	27%	15%	43%	57%	100%
Christchurch City	Barrington	198	178	376	397	774	26%	23%	49%	51%	100%
Christchurch City	Belfast	-	-	-	75	75	0%	0%	0%	100%	100%
Christchurch City	Bishopdale	206	39	245	311	557	37%	7%	44%	56%	100%
Christchurch City	Central City	144	1,850	1,993	34,364	36,357	0%	5%	5%	95%	100%
Christchurch City	Church Corner	174	16	190	95	285	61%	5%	67%	33%	100%
Christchurch City	Edgware	120	50	170	182	351	34%	14%	48%	52%	100%
Christchurch City	Fendalton	209	52	261	87	348	60%	15%	75%	25%	100%
Christchurch City	Ferrymead	132	286	418	1,382	1,800	7%	16%	23%	77%	100%
Christchurch City	Halswell	188	12	200	96	297	63%	4%	67%	33%	100%
Christchurch City	Hillmorton	7	15	22	249	271	3%	5%	8%	92%	100%
Christchurch City	Hornby	-	-	-	46	46	0%	0%	0%	100%	100%
Christchurch City	Ilam/Clyde	27	19	46	263	309	9%	6%	15%	85%	100%
Christchurch City	Industrial - Addington/CC South	645	735	1,380	5,446	6,826	9%	11%	20%	80%	100%
Christchurch City	Industrial - Hornby North	451	1,545	1,996	6,630	8,626	5%	18%	23%	77%	100%
Christchurch City	Industrial - Papanui/Casebrook	387	1,009	1,396	2,722	4,118	9%	24%	34%	66%	100%
Christchurch City	Industrial - Wigram/Hillmorton/Midtown	353	1,748	2,101	24,645	26,746	1%	7%	8%	92%	100%
Christchurch City	Linwood	132	283	415	802	1,217	11%	23%	34%	66%	100%
Christchurch City	Lytelton	13	23	36	515	551	2%	4%	7%	93%	100%
Christchurch City	Marshland	14	228	241	124	365	4%	62%	66%	34%	100%
Christchurch City	Merivale	124	180	304	1,658	1,962	6%	9%	15%	85%	100%
Christchurch City	Moorhouse	-	317	317	243	560	0%	57%	57%	43%	100%
Christchurch City	New Brighton	94	47	141	361	502	19%	9%	28%	72%	100%
Christchurch City	Papanui/Northlands	-	60	60	306	366	0%	16%	16%	84%	100%
Christchurch City	Parklands	91	-	91	100	191	48%	0%	48%	52%	100%
Christchurch City	Redcliffs	36	13	49	58	107	34%	12%	46%	54%	100%
Christchurch City	Riccarton	339	1,185	1,524	2,084	3,608	9%	33%	42%	58%	100%
Christchurch City	Richmond	97	25	122	187	309	31%	8%	39%	61%	100%
Christchurch City	Shirley	135	309	443	824	1,267	11%	24%	35%	65%	100%
Christchurch City	South City	4	221	225	2,016	2,241	0%	10%	10%	90%	100%
Christchurch City	St Martins	215	4	219	35	254	85%	1%	86%	14%	100%
Christchurch City	Sumner	23	32	55	270	325	7%	10%	17%	83%	100%
Christchurch City	Supa Centa	71	257	328	102	431	17%	60%	76%	24%	100%
Christchurch City	Wairakei/Greers	5	31	36	133	169	3%	18%	21%	79%	100%
Christchurch City	Woolston	108	45	153	252	406	27%	11%	38%	62%	100%
Christchurch City	Worcester/Stanmore	13	5	18	84	102	13%	5%	18%	82%	100%
Selwyn District	Darfield	28	59	86	607	693	4%	8%	12%	88%	100%
Selwyn District	Leeston	36	36	73	423	495	7%	7%	15%	85%	100%
Selwyn District	Lincoln	208	20	228	293	521	40%	4%	44%	56%	100%
Selwyn District	Prebbleton	51	6	56	207	263	19%	2%	21%	79%	100%
Selwyn District	Rolleston	356	43	399	102	500	71%	9%	80%	20%	100%
Selwyn District	Rolleston - Main South Line Shops	10	25	35	602	637	2%	4%	6%	94%	100%
Selwyn District	Rolleston North (LFR)	-	1	1	40	40	0%	1%	1%	99%	100%
Selwyn District	West Melton	25	8	33	260	293	9%	3%	11%	89%	100%
Total Modelled Centres		7,858	15,216	23,074	157,249	180,324	4%	8%	13%	87%	100%

Source: M.E Greater Christchurch Retail Gravity Model 2023. Centres defined by SA1. * M.E assumes that the Ohoka Gas Station and workshop is registered as a non-retail industry.



Appendix 6 – Detailed Model Results & Sensitivity Testing

Prior to running the core ‘With the fast track request’ growth scenarios, some test-only scenarios were run to help confirm that way that the Gravity Model was responding to changes in demand and supply separately:

- a) Adding scenario 1 demand but no new centre(s) in the fast track request (Scenario Y). Scenario 1 is the lower dwelling yield (850) with dwelling demand partially redistributed. The Sub-model shows that compared with the status quo projection of food, grocery and employment in modelled centres over time, that at the district level there is no change in total sustained employment (same total household count and demand), and growth across all centres on account of High household growth and other demand. Employment in the Mandeville centre grows faster than would otherwise be the case due to more demand in Ōhoka (which currently forms part of its trade catchment) and accounts for a slightly larger share of district food, grocery and liquor employment growth 2026–2043 (5% instead of 3% in the status quo scenario). Southbrook (as the next closest, and full-service supermarket to Ōhoka) also benefits from the additional households in Ōhoka. Other centres in the district have between 0–2% less employment in 2043 that they would have under the status quo in that year due to the slight redistribution of household growth (but all experience positive growth compared to the (pre-impact) 2026 year).
- b) Adding the lower yield of food, grocery and liquor MECs in the fast track request commercial centre but not the dwellings in the rezoning request (Scenario X). The lower yield of MECs was around 43. To be clear, this is not a realistic scenario as the submitters would not contemplate a convenience centre if the residential dwelling capacity of the fast track request was not approved. The Sub-model shows that compared with the status quo projection of food, grocery and employment in modelled centres over time, that at the district level there is no material change in total sustained employment (same total household count and demand), and a decrease in employment sustained across all centres in 2028 (compared to 2028 in the status quo scenario) due to more demand of existing residents being met in Ōhoka and less being spent in other shopping destinations. That said, excluding Mandeville, all centres would still have more or equal employment in 2028 compared to 2026, as strong growth in demand would offset the trade competition effects of the new Ōhoka centre. Only Mandeville would take longer (2043) to recover to 2026 employment levels, having



sustained an estimated 30% reduction in employment from 2028 compared with the same years in the status quo scenario. Importantly, while the Mandeville centre would sustain less employment than it otherwise might, the Mandeville and Ōhoka community would be better off in net terms due to access to two relatively close centres.

The following two tables provide detailed results from the core/preferred 'with the fast track request' scenarios 1 and 2 relative to the status quo baseline.



Scenario 1 - Existing & Reallocated Demand Growth & New Supply (lower)

COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - STATUS QUO (WITHOUT PROPOSED DEVELOPMENT)

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043
Arlington	5	5	5	6	6	7	2
Countdown Rangiora	135	143	150	166	191	212	69
Kaiapoi	98	74	77	83	93	101	27
Mandeville	33	35	37	40	47	52	17
Oxford	55	58	61	66	74	82	24
Rangiora	312	330	348	384	441	491	161
Rangiora - Lilybrook	5	6	6	7	8	8	3
Ravenswood (Woodend North)	73	78	84	97	117	135	57
Southbrook	318	318	335	369	424	470	153
Waimak Junction	-	81	85	92	103	112	31
Woodend	14	14	14	16	19	21	8
Ohoka (Proposed Centre)	-	-	-	-	-	-	-
Total Waimakariri Centres	1,048	1,142	1,203	1,326	1,523	1,692	550
Mandeville & Ohoka Combined	33	35	37	40	47	52	17

COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - WITH PROPOSED DEVELOPMENT

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043
Arlington	5	5	5	5	6	7	2
Countdown Rangiora	135	143	147	161	185	206	64
Kaiapoi	98	74	76	81	91	99	24
Mandeville	33	35	28	35	39	42	7
Oxford	55	58	61	65	74	82	23
Rangiora	312	330	342	373	429	479	149
Rangiora - Lilybrook	5	6	6	6	7	8	2
Ravenswood (Woodend North)	73	78	83	93	113	131	53
Southbrook	318	318	319	353	405	449	131
Waimak Junction	-	81	83	89	100	109	28
Woodend	14	14	14	16	18	21	7
Ohoka (Proposed Centre)	-	-	43	55	62	66	66
Total Waimakariri Centres	1,048	1,142	1,206	1,333	1,530	1,698	557
Mandeville & Ohoka Combined	33	35	71	90	102	108	73

CHANGE IN COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - WITH VS WITHOUT PROPOSAL YEAR ON YEAR COMPARISON

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043
Arlington	-	-	-	0	0	0	0	-2%	-4%	-3%	-3%
Countdown Rangiora	-	-	-	3	5	6	6	-2%	-3%	-3%	-3%
Kaiapoi	-	-	-	2	2	2	2	-2%	-2%	-2%	-2%
Mandeville	-	-	-	9	5	7	10	-24%	-13%	-15%	-19%
Oxford	-	-	-	0	0	0	0	-1%	-1%	-1%	-1%
Rangiora	-	-	-	6	12	12	12	-2%	-3%	-3%	-2%
Rangiora - Lilybrook	-	-	-	0	0	0	0	-2%	-3%	-3%	-3%
Ravenswood (Woodend North)	-	-	-	1	4	4	4	-1%	-4%	-4%	-3%
Southbrook	-	-	-	16	16	19	22	-5%	-4%	-4%	-5%
Waimak Junction	-	-	-	2	2	3	3	-2%	-3%	-3%	-3%
Woodend	-	-	-	0	0	0	0	-1%	-3%	-2%	-2%
Ohoka (Proposed Centre)	-	-	43	55	62	66	66	N/A	N/A	N/A	N/A
Total Waimakariri Centres	-	-	3	7	7	6	6	0%	1%	0%	0%
Mandeville & Ohoka Combined	-	-	34	50	55	56	56	93%	124%	118%	108%

CHANGE IN COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - WITH PROPOSAL COMPARED TO 2026

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043
Arlington	-	-	0	1	1	2		3%	11%	27%	42%
Countdown Rangiora	-	-	5	18	42	64		3%	13%	30%	45%
Kaiapoi	-	-	1	7	17	24		2%	9%	22%	33%
Mandeville	-	-	7	0	5	7		-21%	1%	13%	20%
Oxford	-	-	2	7	16	23		4%	12%	27%	40%
Rangiora	-	-	11	42	98	149		3%	13%	30%	45%
Rangiora - Lilybrook	-	-	0	1	2	2		3%	13%	29%	44%
Ravenswood (Woodend North)	-	-	5	15	35	53		7%	19%	44%	68%
Southbrook	-	-	1	36	87	131		0%	11%	28%	41%
Waimak Junction	-	-	2	8	19	28		2%	10%	23%	34%
Woodend	-	-	1	2	5	7		5%	16%	36%	54%
Ohoka (Proposed Centre)	-	-	43	55	62	66		N/A	N/A	N/A	N/A
Total Waimakariri Centres	-	-	64	192	389	557		6%	17%	34%	49%
Mandeville & Ohoka Combined	-	-	36	56	67	73		103%	159%	191%	209%

Source: M.E Greater Christchurch Retail Gravity Model - Food, Grocery and Liquor Sub-model, 2024. Centres with no sector employment in 2024 not shown.



Scenario 2 - Existing & Reallocated Demand Growth & New Supply (upper)

COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - STATUS QUO (WITHOUT PROPOSED DEVELOPMENT)

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043
Arlington	5	5	5	6	6	7	2
Countdown Rangiora	135	143	150	166	191	212	69
Kaiapoi	98	74	77	83	93	101	27
Mandeville	33	35	37	40	47	52	17
Oxford	55	58	61	66	74	82	24
Rangiora	312	330	348	384	441	491	161
Rangiora - Lilybrook	5	6	6	7	8	8	3
Ravenswood (Woodend North)	73	78	84	97	117	135	57
Southbrook	318	318	335	369	424	470	153
Waimak Junction	-	81	85	92	103	112	31
Woodend	14	14	14	16	19	21	8
Ohoka (Proposed Centre)	-	-	-	-	-	-	-
Total Waimakariri Centres	1,048	1,142	1,203	1,326	1,523	1,692	550
Mandeville & Ohoka Combined	33	35	37	40	47	52	17

COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - WITH PROPOSED DEVELOPMENT

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043
Arlington	5	5	5	5	6	7	2
Countdown Rangiora	135	143	146	159	183	204	62
Kaiapoi	98	74	75	80	90	98	23
Mandeville	33	35	25	32	36	38	4
Oxford	55	58	60	65	74	81	23
Rangiora	312	330	340	369	425	475	145
Rangiora - Lilybrook	5	6	6	6	7	8	2
Ravenswood (Woodend North)	73	78	83	92	112	130	52
Southbrook	318	318	314	347	398	441	123
Waimak Junction	-	81	82	88	99	108	27
Woodend	14	14	14	16	18	21	7
Ohoka (Proposed Centre)	-	-	56	74	83	88	88
Total Waimakariri Centres	1,048	1,142	1,206	1,335	1,532	1,700	559
Mandeville & Ohoka Combined	33	35	81	107	119	127	92

CHANGE IN COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - WITH VS WITHOUT PROPOSAL YEAR ON YEAR COMPARISON

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043
Arlington	-	-	-	0	0	0	0	-3%	-5%	-4%	-4%
Countdown Rangiora	-	-	-	4	7	7	8	-3%	-4%	-4%	-4%
Kaiapoi	-	-	-	2	3	3	3	-3%	-3%	-3%	-3%
Mandeville	-	-	-	12	8	11	13	-33%	-20%	-23%	-26%
Oxford	-	-	-	0	0	1	1	-1%	-1%	-1%	-1%
Rangiora	-	-	-	8	15	16	16	-2%	-4%	-4%	-3%
Rangiora - Lilybrook	-	-	-	0	0	0	0	-3%	-4%	-4%	-4%
Ravenswood (Woodend North)	-	-	-	1	5	5	5	-1%	-5%	-4%	-3%
Southbrook	-	-	-	21	23	26	29	-6%	-6%	-6%	-6%
Waimak Junction	-	-	-	3	3	4	4	-3%	-4%	-4%	-4%
Woodend	-	-	-	0	1	1	1	-1%	-3%	-3%	-2%
Ohoka (Proposed Centre)	-	-	56	74	83	88	88	N/A	N/A	N/A	N/A
Total Waimakariri Centres	-	-	4	9	9	8	8	0%	1%	1%	0%
Mandeville & Ohoka Combined	-	-	44	66	73	75	75	121%	164%	156%	145%

CHANGE IN COUNT OF SUSTAINED FOOD, GROCERY & LIQUOR EMPLOYMENT - WITH PROPOSAL COMPARED TO 2026

Modelled Centres	Jobs (MECs) 2023	Jobs (MECs) 2026	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043	Growth 2026-2043	Jobs (MECs) 2028	Jobs (MECs) 2033	Jobs (MECs) 2038	Jobs (MECs) 2043
Arlington	-	-	0	0	1	2		2%	10%	26%	41%
Countdown Rangiora	-	-	4	17	41	62		3%	12%	28%	43%
Kaiapoi	-	-	1	6	16	23		1%	8%	21%	31%
Mandeville	-	-	10	3	1	4		-29%	-8%	3%	10%
Oxford	-	-	2	7	15	23		4%	12%	27%	40%
Rangiora	-	-	9	39	95	145		3%	12%	29%	44%
Rangiora - Lilybrook	-	-	0	1	2	2		2%	11%	28%	43%
Ravenswood (Woodend North)	-	-	5	14	34	52		7%	18%	43%	67%
Southbrook	-	-	4	29	80	123		-1%	9%	25%	39%
Waimak Junction	-	-	1	7	18	27		1%	9%	22%	33%
Woodend	-	-	1	2	5	7		5%	15%	35%	53%
Ohoka (Proposed Centre)	-	-	56	74	83	88		N/A	N/A	N/A	N/A
Total Waimakariri Centres	-	-	65	194	391	559		6%	17%	34%	49%
Mandeville & Ohoka Combined	-	-	46	72	85	92		132%	205%	242%	263%

Source: M.E Greater Christchurch Retail Gravity Model - Food, Grocery and Liquor Sub-model, 2024. Centres with no sector employment in 2024 not shown.