Mount Alexander Shire:
Land Supply & Demand Assessment

Final report

Project undertaken for
Mount Alexander Shire Council
May 2022

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Land Supply & Demand Assessment

This project has been conducted by REMPLAN

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Consultant

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1 Introduction

1.1 Background

Mount Alexander Shire Council (MASC) are currently preparing a shire-wide Settlement Planning Assessment.

The assessment includes review and analysis of key data and information relevant to the statutory requirements of MASC as the responsible planning authority. Clause 11.02 provides a clear obligation for MASC to establish adequate land supply for residential development that meets projected population growth for the next 15 years.

The work seeks to integrate planning policy and strategic context, demographic data and forecasts, land supply and demand, housing needs and affordable housing to inform local strategic land use planning within the local government area (LGA).

1.2 Objectives and scope

The project has two main objectives. The first objective is to establish a baseline snapshot of residential land supply across the LGA which can be subsequently updated on an annual basis. The land supply analysis will provide a consistent approach in assessing availability of land, with the results feeding into land use demand analysis.

The second objective is to understand current levels and key drivers of residential land demand across the LGA. The outcomes of the demand assessment are intended to enable analysis of the adequacy of land supply and inform the strategic review and policy development for provision of future housing within the LGA.

Specific requirements of the project require a combination of spatial analysis and strategic reporting. This includes:

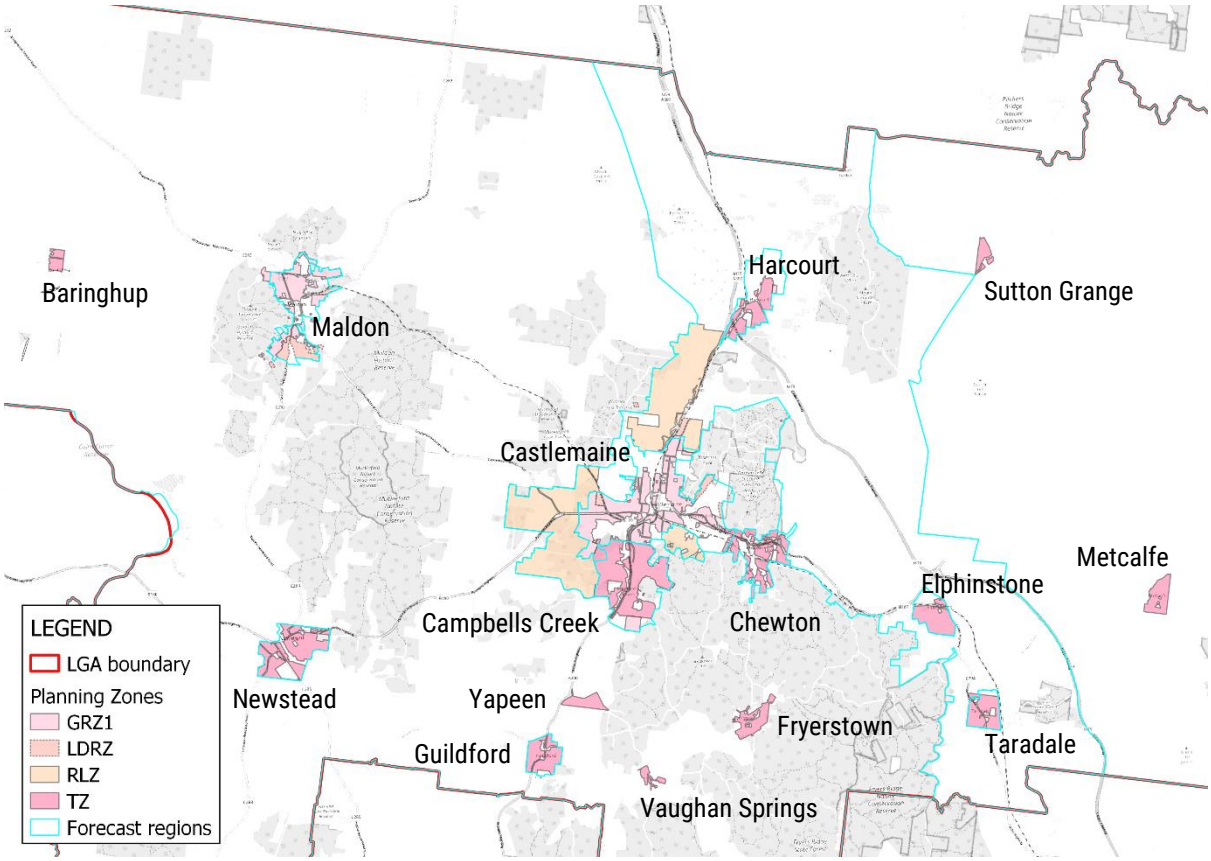
- Establish definition of ‘vacant’ and ‘available’ land and criteria for assessing residential land supply.
- Finalise and define a priority matrix to inform sequence, staging and constraint assessment.
- Undertake spatial analysis and assessment at a parcel level to provide an audit of existing residential land supply (include land within General Residential Zone, Township Zone, Low Density Residential Zone, and Rural Living Zone).
- Review historic and current residential lot demand and type.
- Prepare a demand analysis that aligns population projections and housing demand.
- Draft reporting that compiles assessment methodology, demand analysis and supply assessment with broader strategic advice.

1.3 Regions of analysis

The land supply assessment was focused on residentially zoned land within the municipality, with the addition of the rural living zone as a residentially-focussed rural zone (Figure 1-1). The land supply assessment did not include parcels within any other zone.

Demand assessment was prepared for specified forecast regions. These regions broadly align to the nine major township boundaries as outlined in the Mount Alexander Planning Scheme. It is relevant to note that township boundaries (and forecast regions) do not always align with residential zones. In addition to the nine township forecast regions, there are two rural forecast regions. The two rural areas included the higher growth 'Calder Corridor', and a 'Rural Balance' which covers all other land in the municipality and contains many of the smaller townships across the LGA.

Figure 1-1 Forecast areas and land use zoning



2 Approach

2.1 Supply assessment

The approach taken for the land supply assessment was to complete a review and assess the development potential of all residential land within the LGA at a parcel level. The approach provides an assessment of the status of residential lots and is also considered to provide a more detailed reflection of the actual development potential of land within the LGA compared to an approach using aggregate supply. The assessment was performed as a desktop exercise in GIS software utilising current parcel data from Vicmap Property, overlay and zoning information from Vicmap Planning, and current aerial imagery from Council.

The following provides a summary of the major elements of the approach taken in the supply assessment which includes:

- Allocating parcel status
- Defining residential land supply area
- Accounting for environmental constraints
- Allocating timing of new lot development (subdivision)
- Calculating lot yield

Parcel status

Every residential parcel across the municipality was allocated a status of either occupied, vacant or future. Occupied parcels were those which contained an existing dwelling. Parcels where construction of a dwelling had commenced but a Certificate of Occupancy had not been issued were allocated as vacant. Occupied parcels were excluded from the final count of supply.

Vacant parcels were the only lots included in the final calculations of land supply. Parcels identified as future residential land were for Council's internal review and were not included in the final calculations of land supply.

The parcel layer of Vicmap Property contains both existing land parcels and proposed land parcels. Proposed parcels are those which are part of a subdivision or consolidation which has a certified plan but are yet to have land titles issued. The result of this is that some residential land includes an existing parent parcel overlapping with a proposed parcel. In these instances, only the proposed parcels were allocated a status of occupied or vacant with the parent parcels marked as undergoing subdivision or consolidation.

Residential land supply areas

The application of land supply areas recognises that the intensity of development will vary across townships within the LGA, but also within the larger individual townships. For example, lot sizes for new infill development within unsewered township of Taradale will be vastly different to infill development in the central area of Castlemaine.

Land supply areas determine which lot size will be applied to vacant parcels with subdivision potential when calculating the final yield. These lot sizes are applied to parcels withing the General Residential Zone (GRZ) and the Township Zone (TZ). Parcels within Low Density Residential Zone (LDRZ) and Rural

Living Zone (RLZ) were all allocated as 'standard' but the minimum lot sizes from the planning scheme applied. Maps of land supply areas for each forecast area are included in the maps in Section 3.

Small supply area

Small supply areas were defined in the central areas of Castlemaine, Maldon, Newstead and Harcourt.

The extent for the small supply area in Castlemaine was determined by reviewing existing development patterns and the extent of smaller lot subdivisions. The extent for the small supply areas in Maldon and Newstead was reflective of potential smaller lot subdivision occurring in the future, given this type of development is not currently as prevalent in these townships. In Maldon and Newstead, strategic direction to support housing in locations with existing services also informed the extent of small supply areas. The extent of the small supply area in Harcourt is a reflection of strategic intent outlined in the recently completed Harcourt framework plan.

An 'average lot size' was applied which specified the land area to be used in yield calculations of existing parcels with subdivision potential. The average lot size was determined through an assessment of 263 lots which are part of smaller subdivisions within the small supply type area in Castlemaine. The average lot size of the 263 lots was 336sqm which was rounded up to 350sqm.

A 'minimum lot size for subdivision' was also specified which is a threshold value for including/excluding vacant lots as having subdivision potential. Any vacant lots below this value only provided 1 lot in the final count. Any lots above this value are counted as having subdivision potential. This is only a threshold value and not used for any other calculations. The value assigned was 2,000 sqm. While it is recognised that parcels below 2,000 sqm could be candidates for subdivision within the small supply area, strategic work is currently being undertaken as part of the *Housing and Neighbourhood Character Strategy* that will interrogate development potential of sites within this central area in greater detail. The application of the 2,000 sqm threshold value is considered an appropriate and conservative value to apply until such time as the *Housing and Neighbourhood Character Strategy* is completed, which will in turn inform the next iteration of land supply assessment.

Standard supply area

Standard supply areas are the 'middle' residential areas within the main townships of Castlemaine, Campbells Creek, Maldon, Newstead and Harcourt.

These areas are generally characterised by development at conventional densities where most lots will be between 700sqm and 1,200 sqm, though they will contain scatterings of larger or smaller lots. Identified growth areas, such as Diamond Gully and the southern extent of Campbells Creek, are also included. Standard supply areas sit between the inner residential areas which are allocated as the small supply area, and existing residential land on the outskirts of townships which display a more dispersed development pattern.

The land area for 'average lot size' in standard supply areas was determined through an assessment of 364 lots in six newer subdivisions in McKenzie Hill/Diamond Gully, Campbells Creek and Harcourt. The average lot size of the 364 lots was 891sqm which has been rounded down to 850sqm.

The size of the 'minimum lot size for subdivision' was 4,000sqm, twice that of the minimum lot size for subdivision in the standard supply area.

Large supply area

Large supply areas are the outer fringe residential areas within the main townships of Castlemaine, Campbells Creek, Chewton, Maldon, Newstead and Harcourt. These areas are generally characterised

by more dispersed development at lower densities where most lots will be between 1,200 to 4,000 sqm, though they will contain scatterings of larger or smaller lots.

The land area for 'minimum lot size' in large supply areas was determined through an assessment of occupied lots and recently subdivided lots within large supply type areas in Newstead, Maldon, Castlemaine, Chewton, Campbells Creek. The average lot size was 2,725 sqm which was reduced to 2,000 sqm for the average lot size calculations.

The threshold size of parcels for the 'minimum lot size for subdivision' was 8,000sqm, twice that of the minimum lot size for subdivision in the large supply area.

Extra-large supply area

Extra-large supply areas were allocated to all the smaller townships in the LGA, all of which are unsewered. Townships included as extra-large supply areas include Baringhup, Elphinstone, Guildford, Metcalfe, Sutton Grange, Taradale, Vaughan Springs, and Yapeen. These areas are generally characterised by low density residential development on large lots that are required to manage wastewater on-site. There is currently no plan to service any of these townships with reticulated sewer in the foreseeable future.

The land area for 'average lot size' in extra-large supply areas was based on information from Council that these townships have a minimum lot size of 4000sqm due to wastewater disposal constraints.

The size of the 'minimum lot size for subdivision' was 8,000sqm.

Table 2-1 Land supply area summary

Land supply area	Average lot size (sqm)	Description
Small supply area	350	Allocated to the central areas of Castlemaine, Maldon, Newstead and Harcourt. Average lot size calculated through an audit of lots within the central area of Castlemaine.
Standard supply area	850	Allocated to the 'middle' residential areas within the main townships of Castlemaine, Campbells Creek, Maldon, Newstead and Harcourt. Average lot size calculated through an audit of lots in McKenzie Hill/Diamond Gully, Campbells Creek and Harcourt.
Large supply area	2,000	Allocated to the outer fringe residential areas within the main townships of Castlemaine, Campbells Creek, Chewton, Maldon, Newstead and Harcourt. Average lot size calculated through an audit of lots in Newstead, Maldon, Castlemaine, Chewton, Campbells Creek.
Extra-large supply area	4,000	Allocated to all the smaller townships in the LGA. Average lot size based on information from Council that these townships have a minimum lot size of 4000sqm due to wastewater disposal constraints.

Environmental constraints

Environmental constraints limit the development potential of affected land. Constraints in the supply assessment have only been applied where the presence of bushfire and flooding are identified. Constraints are applied to lots where the bushfire management overlay (BMO)and the flood overlay (FO) apply. The FO is only present in Castlemaine and Campbells Creek. Additional flood extent analysis[1] was used in the township of Newstead given the known flooding issues present in that township.

Other possible environmental constraints, such as vegetation or topography, have not been considered. However, many of these areas are constrained by bushfire risk and this has been considered as outlined below.

Bushfire constraint

The bushfire constraint only applies to lots greater than 1 hectare. The 1-hectare threshold was utilised as a representation of how real-life development would respond to the presence of the BMO. That is, larger subdivisions will often incorporate larger lots with greater setbacks adjacent to the bushfire threat or incorporate a road encompassing the subdivision with only one side having lots. These measures allow lots within these larger subdivisions to keep a BAL rating down to 12.5 or 19. However, both methods reduce the overall developable area and the yield. Engagement with City of Greater Bendigo indicated that developers undertaking subdivisions in BMOs will reduce lot yield from 12 dwellings per hectare down to 8 dwellings per hectare, or 66% efficiency. The bushfire constraint has not been applied to smaller lots of less than 1 ha. This attempts to reflect those smaller subdivisions having reduced ability or desire to provide large setbacks, so will often increase BAL ratings for dwellings.

Flood constraint

If the flooding constraint applies to any part of a vacant parcel the affected lot is categorised as not able to be subdivided. A vacant parcel remains as supply, but will only count as one lot regardless of size.

Infrastructure constraints

Infrastructure constraints have primarily been considered in relation to unsewered townships and the impact this has on minimum lot size (see 'Extra-large supply area' section above).

In townships where infrastructure exists in the vicinity but not directly to a specific lot it is assumed that services will be extended as necessary in accordance with the relevant authorities' requirements. No site-specific analysis has been undertaken to determine the viability of extending infrastructure networks to currently unserviced areas.

Development type for new supply and allocation of timing

Categorisation of supply has been aligned with the development types applied by DELWP, with the addition of a separate category to capture smaller infill lots that have subdivision potential but sit below the size of major infill parcels. The categories are as follows:

[1] Water Technology 2017, *Newstead Levee Alignment – Modelling Assessment*

- **Retail with title:** these are existing lots that are below the set subdivision threshold.
- **Retail proposed:** these are lots in the process of being subdivided, having a certified plan of subdivision but not yet issued with a title.
- **Retail potential:** these are larger lots within the urban area which are deemed to have subdivision potential. The size of these lots varies depending on the within a land supply area.
- **Major urban infill:** these are large lots with an area of at least 1 hectare that are within the urban area. Any vacant parcels that are contiguous with a major urban infill parcel are allocated the same categorisation regardless of their size.
- **Greenfield zoned:** these are similar to major urban infill lots having a minimum size of 1 hectare but are located on the fringe of the urban area. Any vacant parcels that are contiguous with a greenfield infill parcel are allocated the same categorisation regardless of their size.
- **Greenfield unzoned:** these include all lots which are not currently zoned for residential use, but identified as part of strategic studies and are to commence the process of rezoning in the near future, or are currently in the process of rezoning.

Excluded lots by area

Following feedback provided by DELWP, all lots below 300 square metres in area have been excluded from the analysis.

Excluded areas in Happy Valley

The majority of the land contained within the Happy Valley DPO5 area has been excluded from the land supply assessment given it is an environmentally sensitive area with a number of environmental constraints that are not conducive to residential development, including:

- Bushfire risk
- Native vegetation
- Existence of threatened species within the area
- Potential impacts on the Castlemaine Diggings National Heritage Park
- Subdivision of land into three or more lots, in an area of potential cultural heritage sensitivity is considered a high impact activity under the Aboriginal Heritage Act (2006) and related legislation, and the site is also located within 200 metres of a waterway. Either a Cultural Heritage Management Plan (CHMP) or sufficient proof that the site has been subject to significant ground disturbance in the past, is therefore required.
- Investigation into potential contamination and the level of assessment required
- Proximity to Crown Land

A development plan for the whole DPO5 area was endorsed by Council's Strategic Planning unit in December 2021. This identifies two distinguished areas of the overall development plan:

- Area A: two proposed dwellings (these allotments have been included within the land supply); development of this area is subject to a future planning permit
- Area B: 'no development proposed' on the remainder of the development plan area (see map in Figure 2-1 for lots excluded from land supply).

The endorsed development plan includes conditions required to be completed prior to issuing any future planning permit for development in Area A, and also conditions which must be included on any planning permit issued.

Figure 2-1 Happy Valley

2.2 Demand assessment

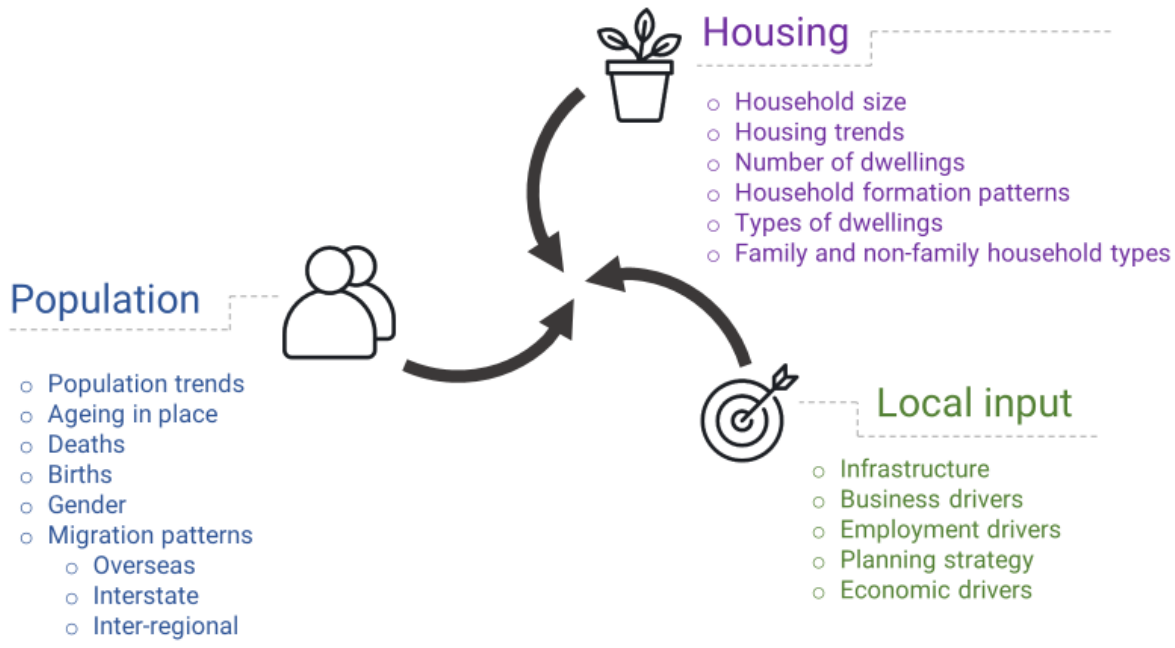
The residential land demand assessment was completed as part of Council's ongoing commission of population and housing forecasts undertaken by REMPLAN. The demand assessment was prepared for 'forecast areas' defined by Council. There are eleven forecast areas which include the nine main townships and two rural areas.

Forecast areas for the nine major townships align with township boundaries specified in the planning scheme. Forecast areas for the townships generally align with land use zones, however there are some discrepancies where small areas of contiguous residentially zoned land sits outside a township's forecast area. This does not influence demand forecasts. Supply is allocated based on which forecast area a lot is located.

The two rural areas are the 'Calder Corridor Rural' and the 'Balance Rural'. The Calder Corridor Rural area incorporates all RLZ land around Castlemaine and areas of farming zone which extend along the Calder Highway. The Calder Corridor Rural area is often characterised by residential development in a rural setting. The Balance Rural forecast area accounts for all other land in the municipality not part of the nine major townships or the Calder Corridor Rural area. The Balance Rural area predominantly incorporates farming zone land, however several of the smaller villages which are zoned for residential use (township zone) are included in this forecast area.

REMPLAN Forecast delivers independent population and housing forecasts which take into consideration the drivers of demographic and housing change in a specific region. Figure 2-2 summarises the inputs that are part of the forecasts.

Figure 2-2 Inputs into REMPLAN Forecasts



Forecast methodology summary

Population - Modelling of the underlying drivers of population change – namely, fertility rates, mortality rates and net migration – are undertaken individually using age and gender specific models.

The models are estimated separately for females and males by single year of age, this method captures the full dynamism of the evolving demography of the region.

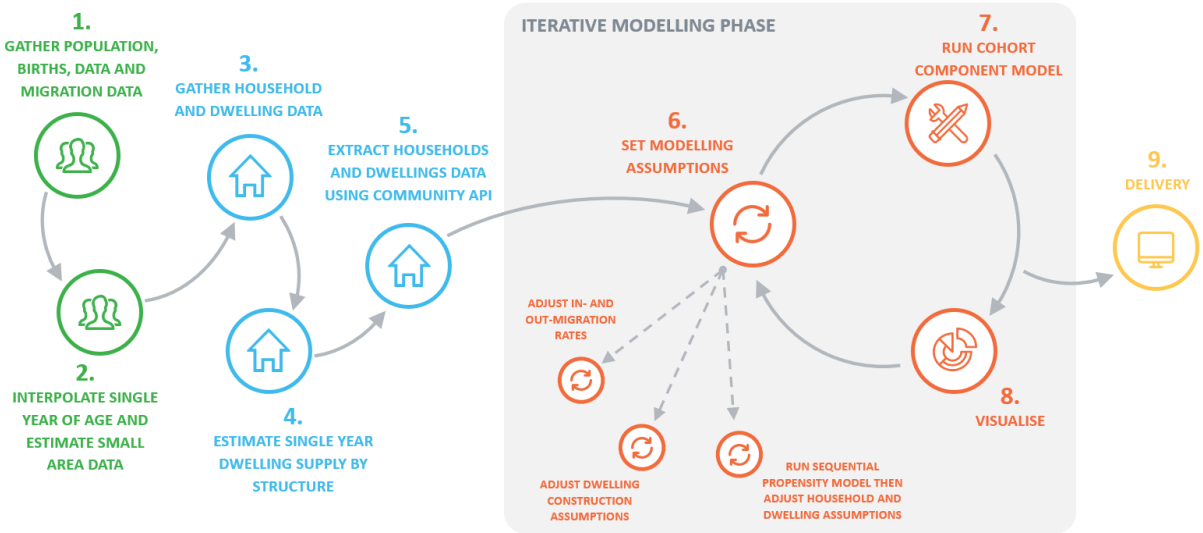
Housing - Population change is combined with understanding the household formations that are specific to that geography i.e., lone persons households, couples only, families, etc and this is then overlaid with identified future land supply in the region

Land Supply – Results of the land supply assessment prepared as part of this project were used as inputs for residential land supply in specific areas across the municipality. Additional analysis was also undertaken by REMPLAN to determine the level of residential demand that is being provided in non-residential areas. Residential demand in non-residential areas is predominantly provided in the farming zone.

Localised input – This may include business and employment drivers, local planning strategies and infrastructure which can influence population growth in a region. REMPLAN engages with Council throughout the process to understand any of these local insights which are then incorporated into the forecasts. The process flow diagram in Figure 2-3 below outlines the steps undertaken to deliver the forecasts with a more detailed summary in Appendix A. Localised inputs typically include:

- Dwelling approvals, dwelling commencements and planning permits. These are key underlying drivers of population. Dwelling data is analysed as well as major development activities in the pipeline.
- Historical data relating to land release/planning changes and the correlation with historical population estimates, or actual changes to population as a % will always be expected to cater for projected growth.
- Land supply and timing of future land releases for the duration of the forecast period.
- Major projects occurring (infrastructure, etc)
- Recent of future industry attraction or closures
- Planned and implemented planning strategies or policies.

Figure 2-3 REMPLAN Small Area Forecast detailed process overview



3 Supply assessment

This section reports on the outcomes of the supply assessment for the defined forecast areas up until 2041.

Total supply until 2041 across the municipality is 4,342 lots. The majority of land supply for residential use is provided within Castlemaine followed by Campbells Creek. A substantial proportion of new supply in these areas is within identified local growth areas of McKenzie Hill and Diamond Gully in Castlemaine's west, and also to the south of Campbells Creek, all of which are accommodating larger greenfield subdivisions.

However, these growth areas are not the only locations providing new residential land. The majority of new supply will likely be provided through smaller isolated parcels spread throughout various townships. Historic settlement patterns throughout Mount Alexander Shire create a unique and somewhat fragmented pattern of development. For example, areas to the west of Campbells Creek contain a relatively large number of vacant parcels of various sizes, interspersed with residential development. Similar conditions are present in Chewton, Maldon, and Newstead.

Overall land supply across the LGA is summarised in Table 3-1 and Table 3-2. The amount of residentially zoned land is lower at just over 3,700 lots (see Table App - 1 in Appendix B).

Maps of municipality's fifteen townships identifying vacant and occupied residential land parcels, constraints, and other classifications are provided on the proceeding page. Section 3.1 provides a summary of key supply issues across the LGA.

Table 3-1 Total land supply in forecast areas (primary townships) to 2041

Forecast area	Total land supply	Share of total
Campbells Creek	860	24.5%
Castlemaine	1,150	32.7%
Chewton	405	11.5%
Elphinstone	29	0.8%
Guildford	66	1.9%
Harcourt	315	9.0%
Maldon	328	9.3%
Newstead	306	8.7%
Taradale	53	1.5%
Total	**3,512**	**100.0%**

Source: REMPLAN Forecast May 2022

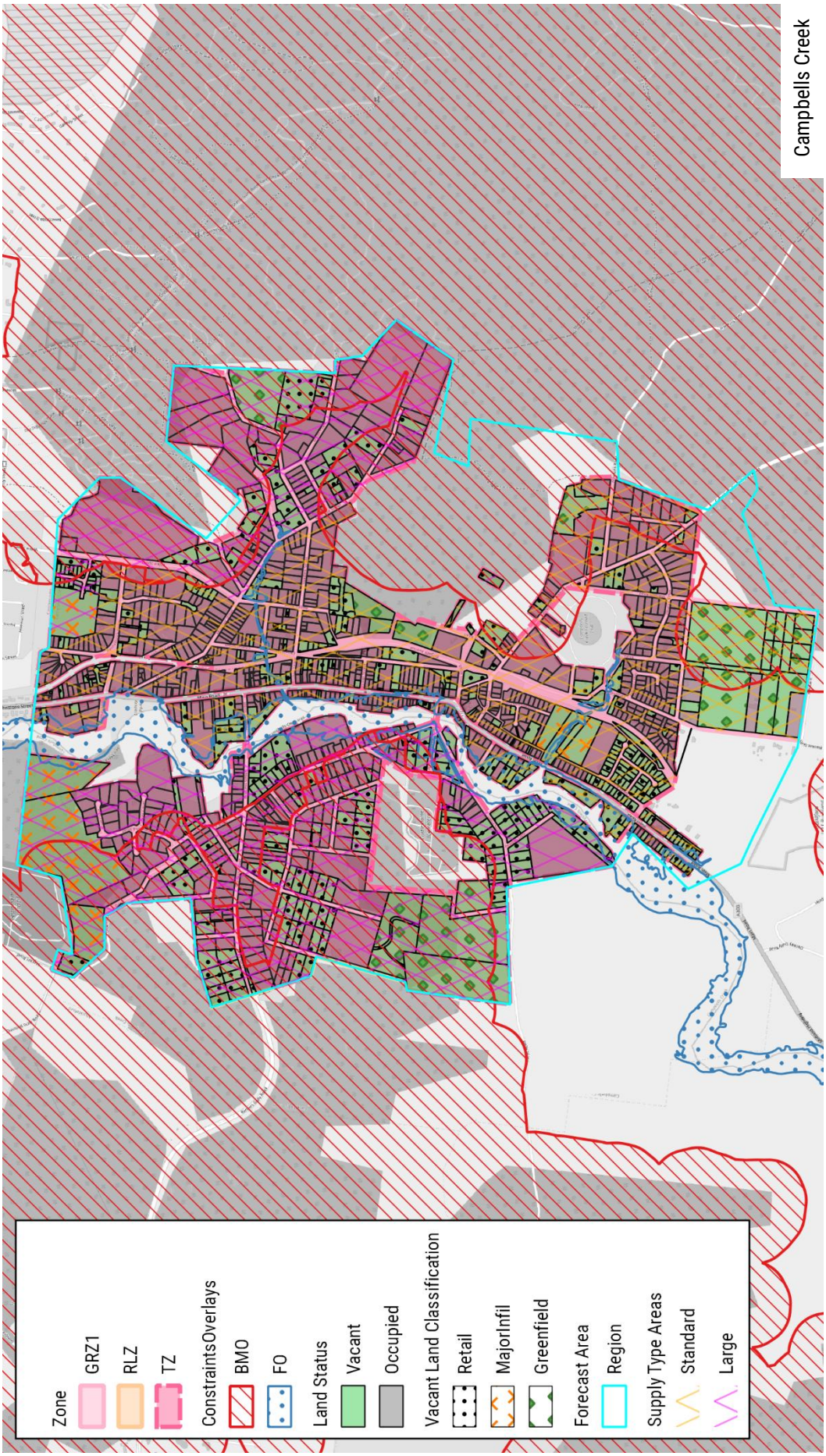
Table 3-2 Total land supply in forecast areas (minor townships and rural areas) to 2041

Forecast area	Total land supply	Share of total
Balance Rural	299	36.0%
Calder Corridor Rural	531	64.0%
Total	**830**	**100.0%**

Source: REMPLAN Forecast May 2022

Note: The 'balance rural' area includes the small rural communities of Baringhup, Fryerstown, Metcalfe, Sutton Grange, Vaughan and Yapeen. Supply figures for rural areas incorporate some non-residential land. This includes RLZ land which was included in the supply audit, as well as a measure of FZ land which reflects historic construction activity and forecast demand.


Baringhup
Zone
TZ
Land Status
Vacant
Occupied/unavailble
Vacant Land Classification
Retail
Supply Type Areas
Extra Large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RLZ
TZ
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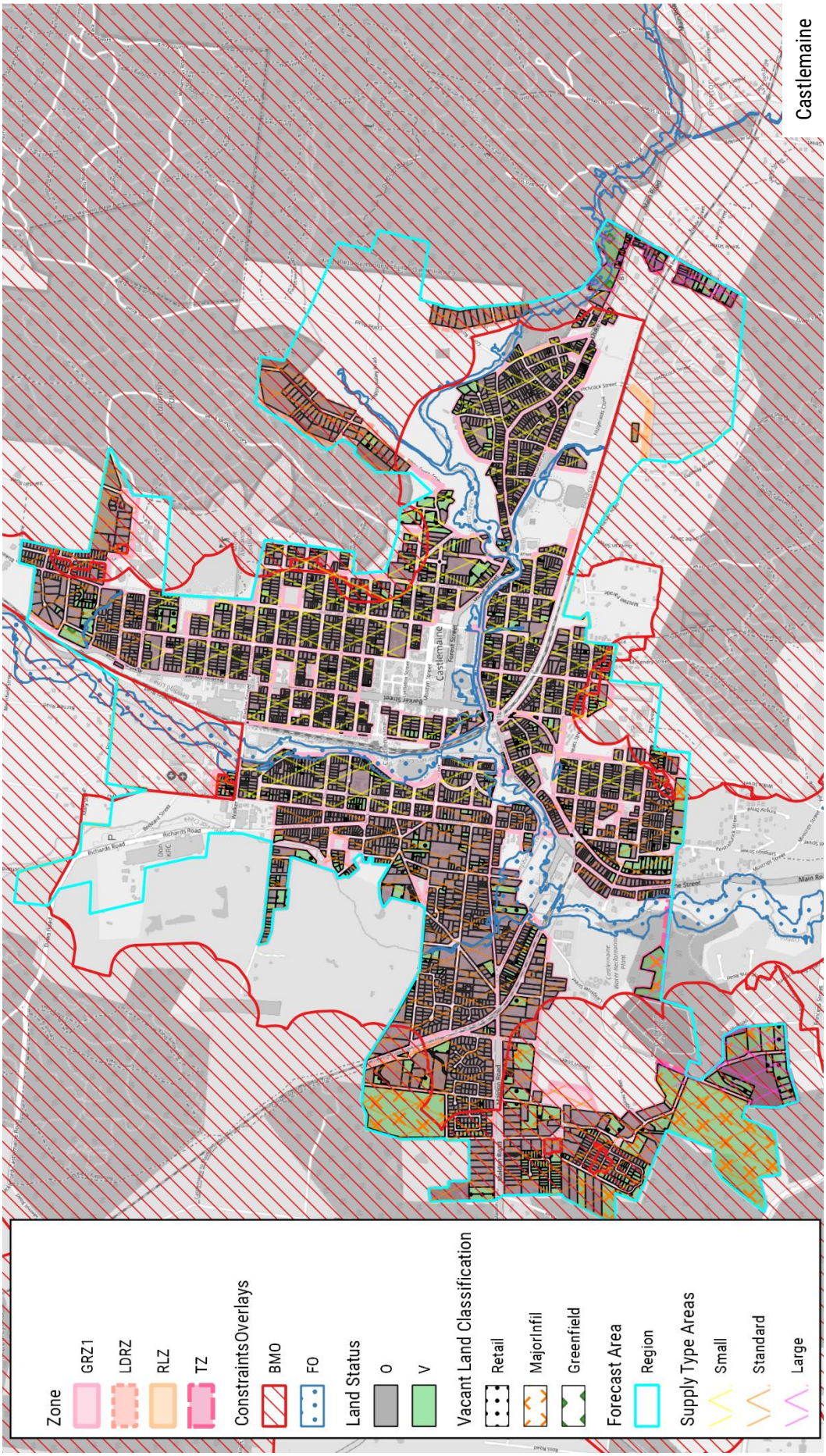
Forecast Area
Region
Supply Type Areas
Standard
Large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LDRZ
RLZ
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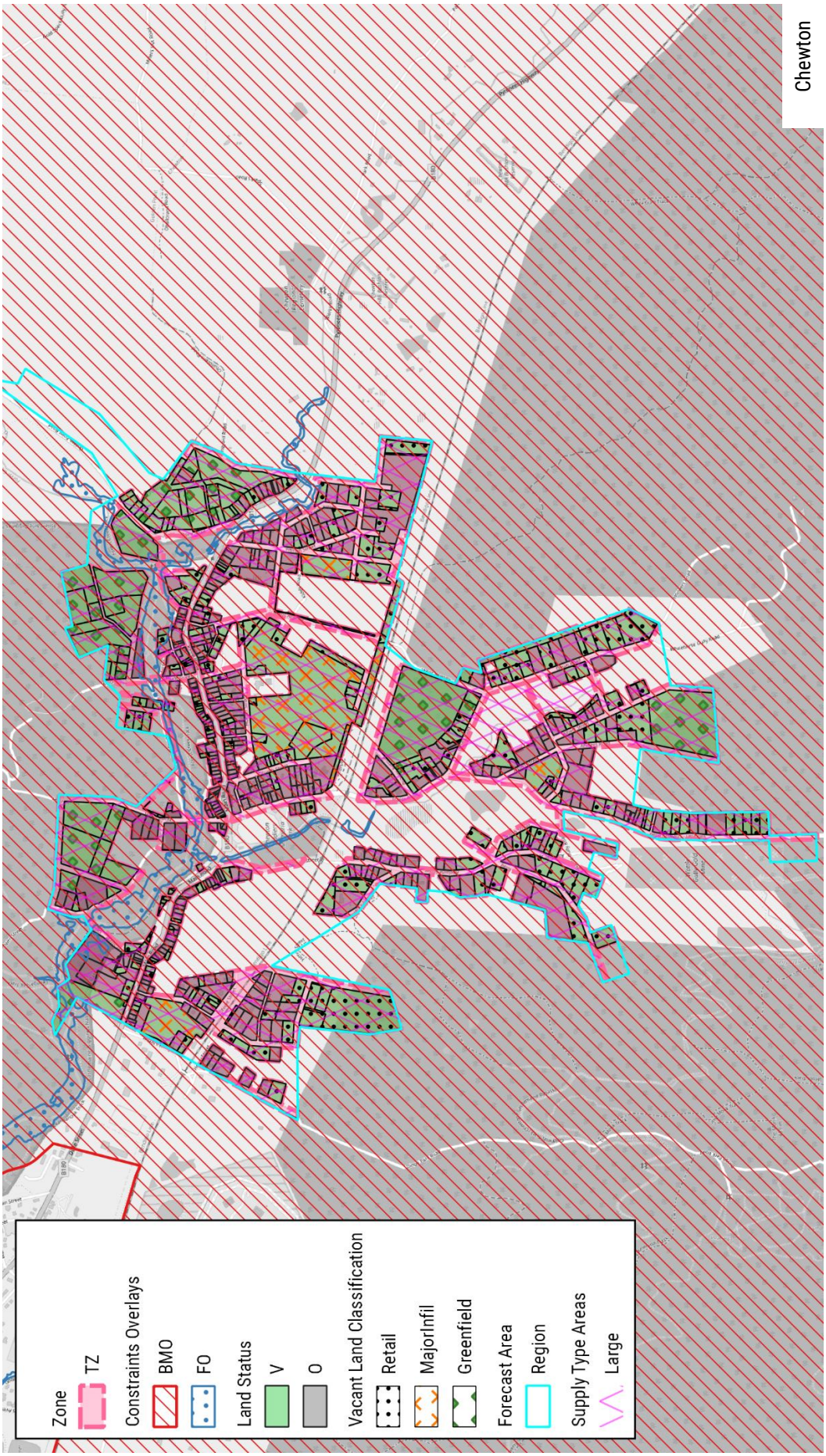
Forecast Area
Region
Supply Type Areas
Small
Standard
Large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BMO
FO
Land Status
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O
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Retail
MajorInfil
Greenfield
Forecast Area
Region
Supply Type Areas
Large


Fryerstown
Zone
TZ
ConstraintsOverlays
BMO
Land Status
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Occupied/unavailble
Vacant Land Classification
Retail
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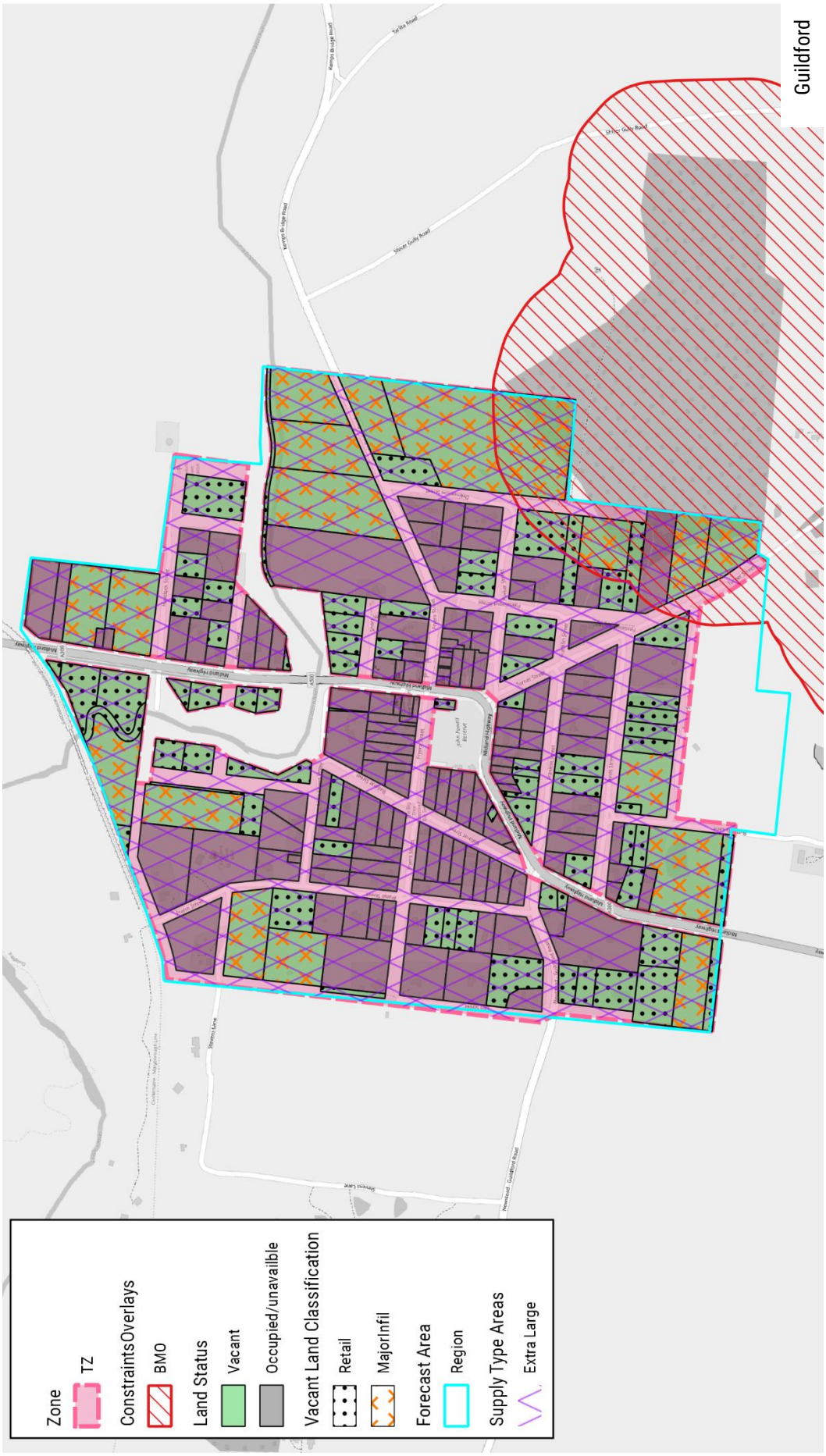
Supply Type Areas
Extra Large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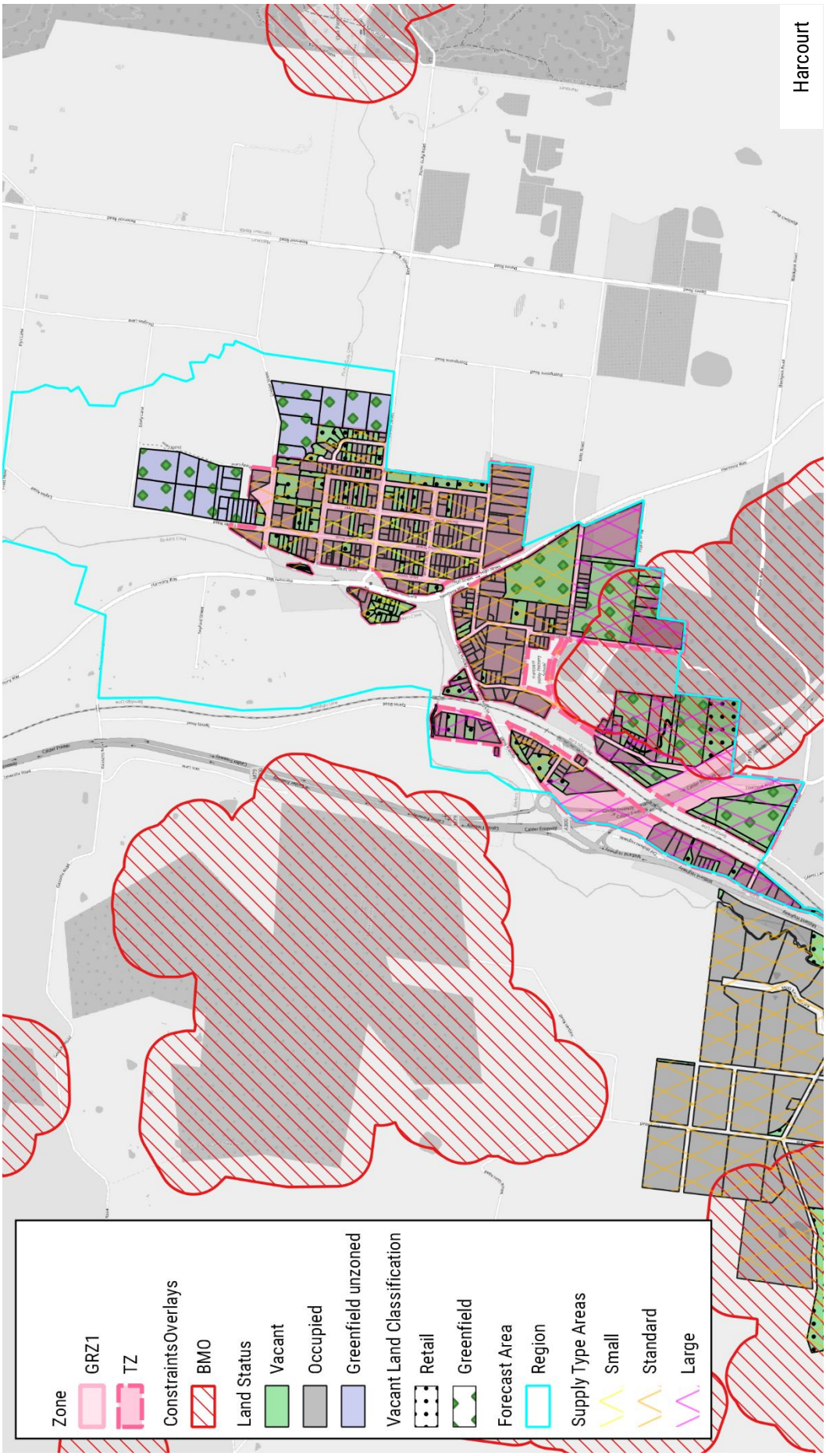
Region
Supply Type Areas
Extra Large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Region
Supply Type Areas
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Standard
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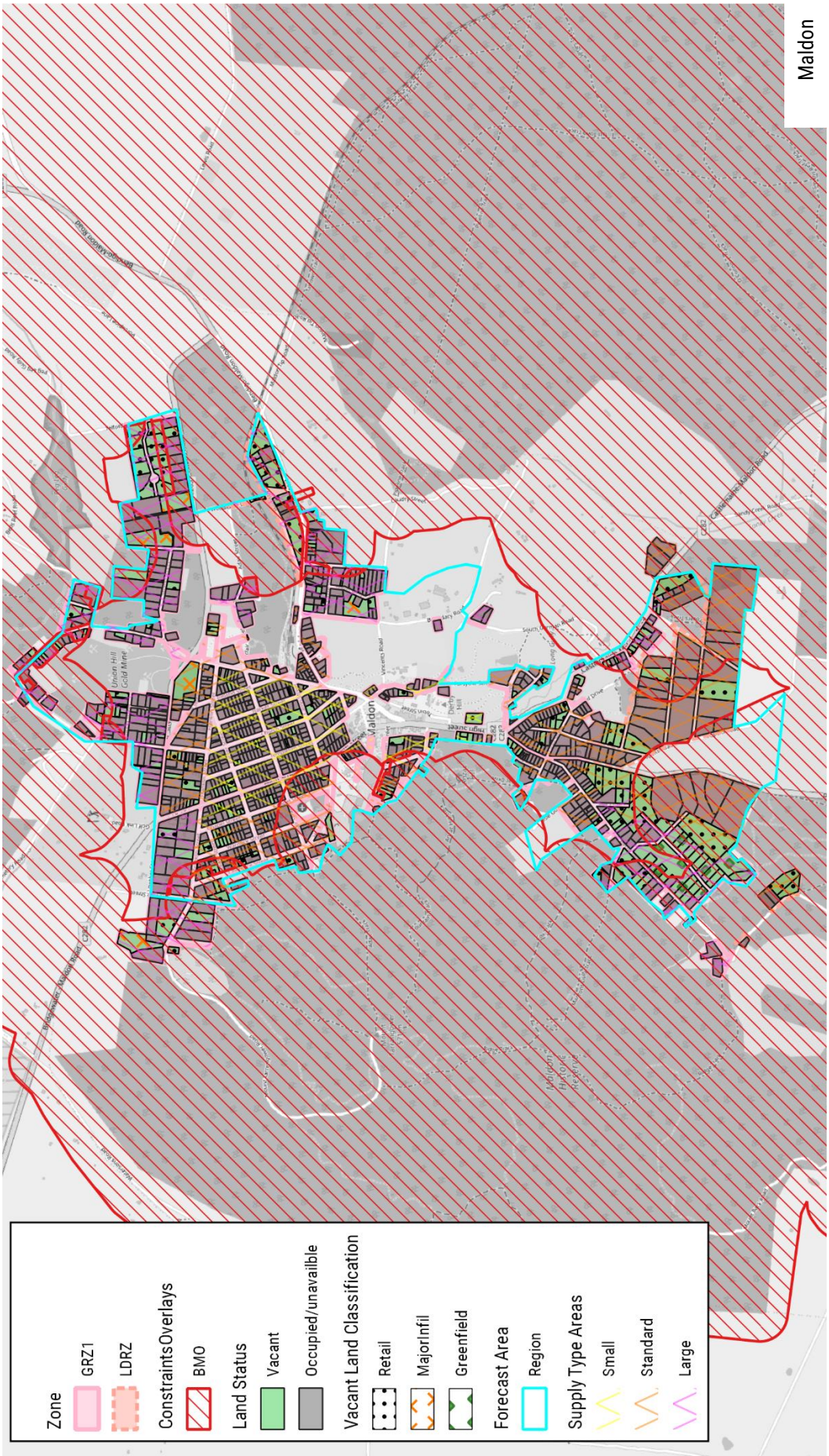
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Region
Supply Type Areas
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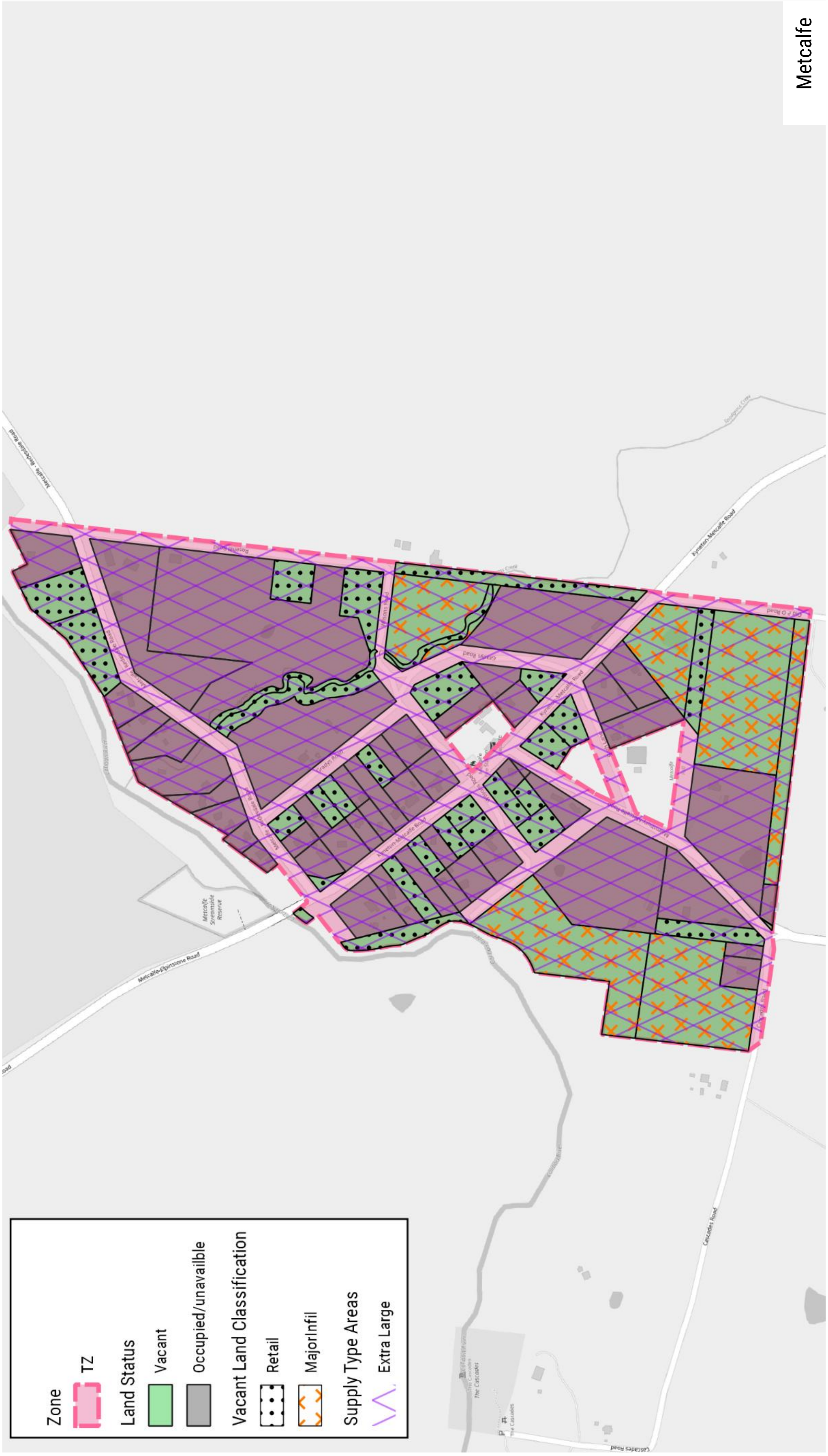
Standard
Large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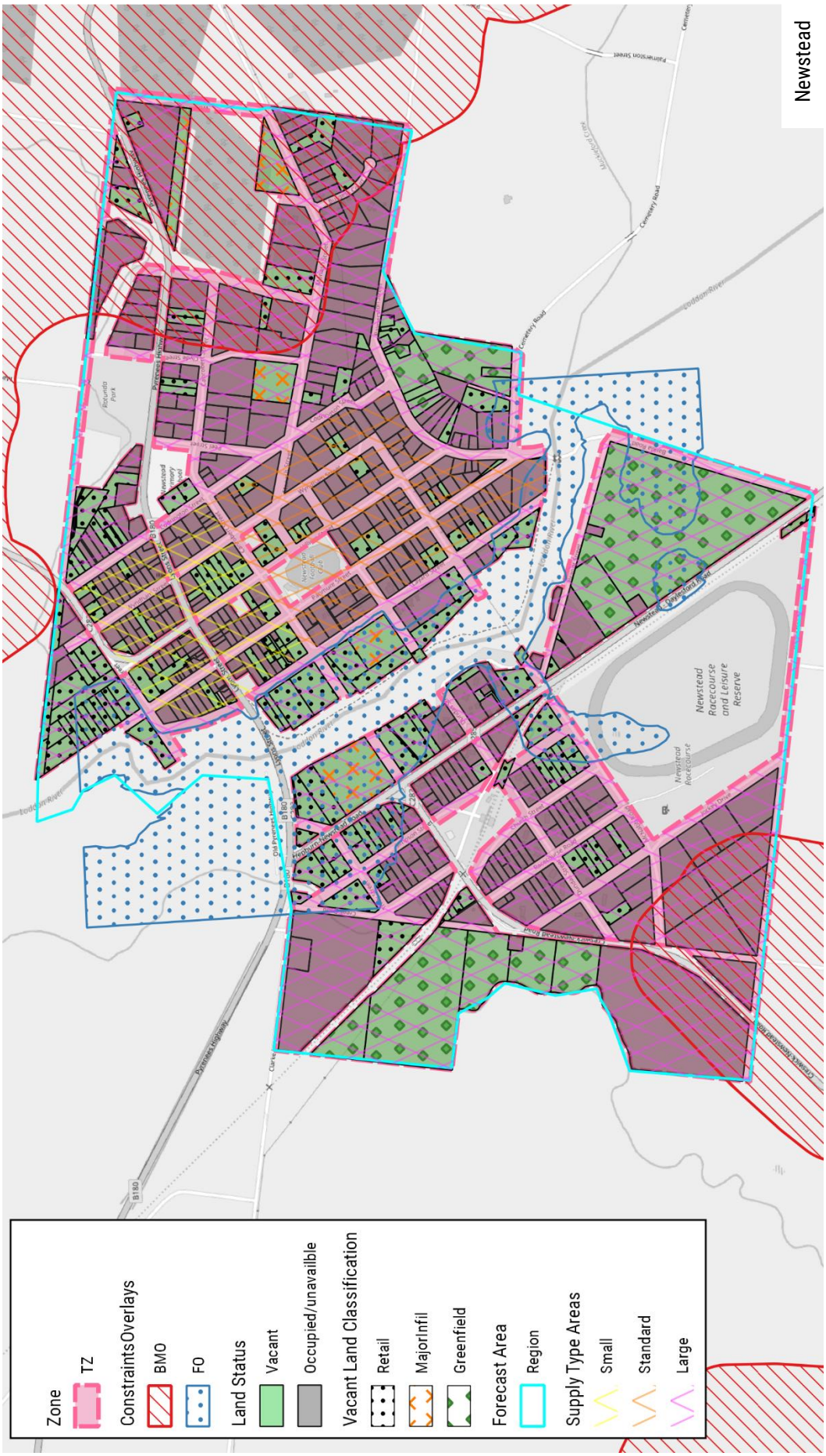
Supply Type Areas
Extra Large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BMO
FO
Land Status
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Occupied/unavailble
Vacant Land Classification
Retail
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Forecast Area
Region
Supply Type Areas
Small
Standard
Large
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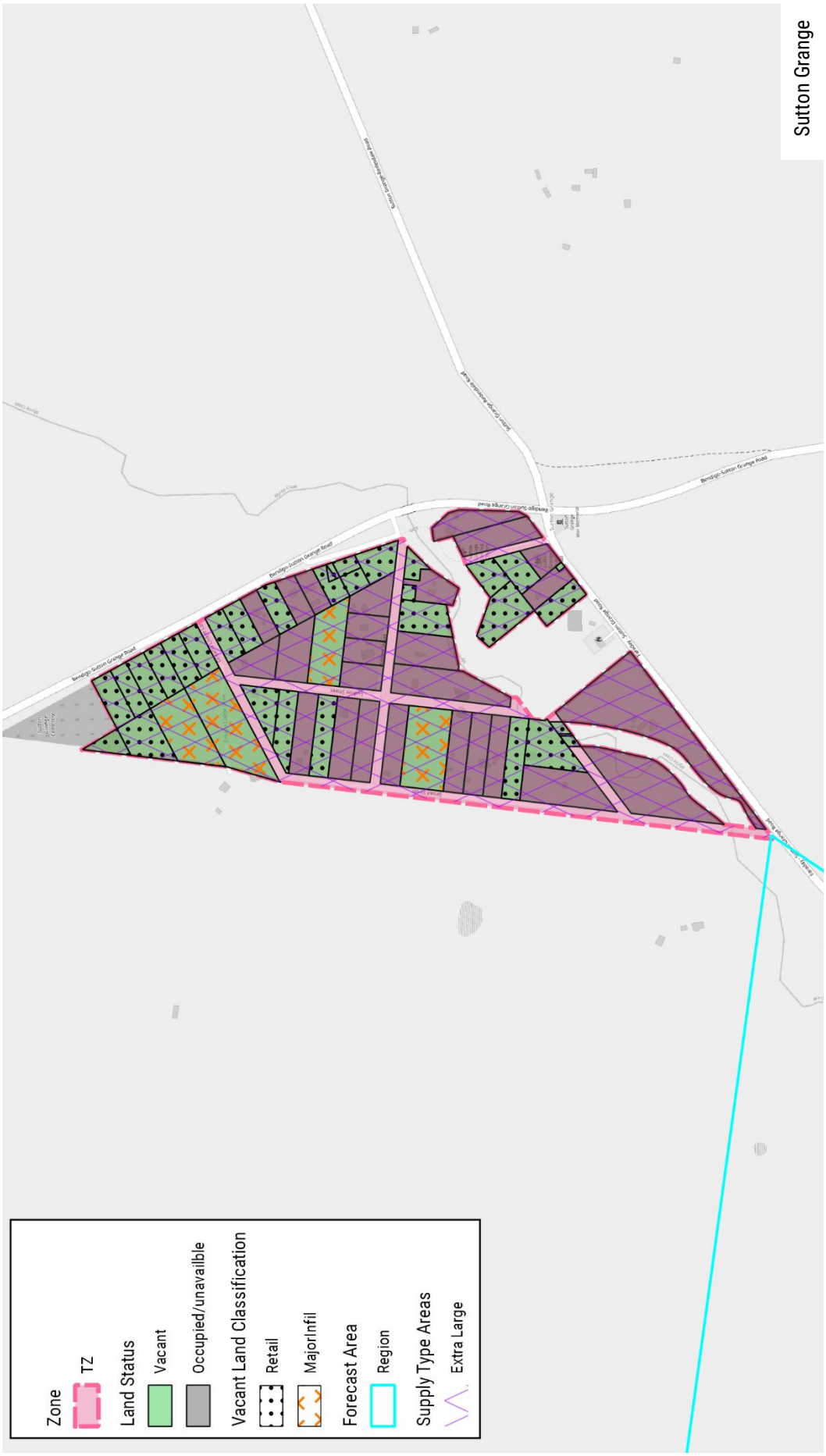
Cemetery Road
Loddon River
Pyrenees Highway
B180


Sutton Grange
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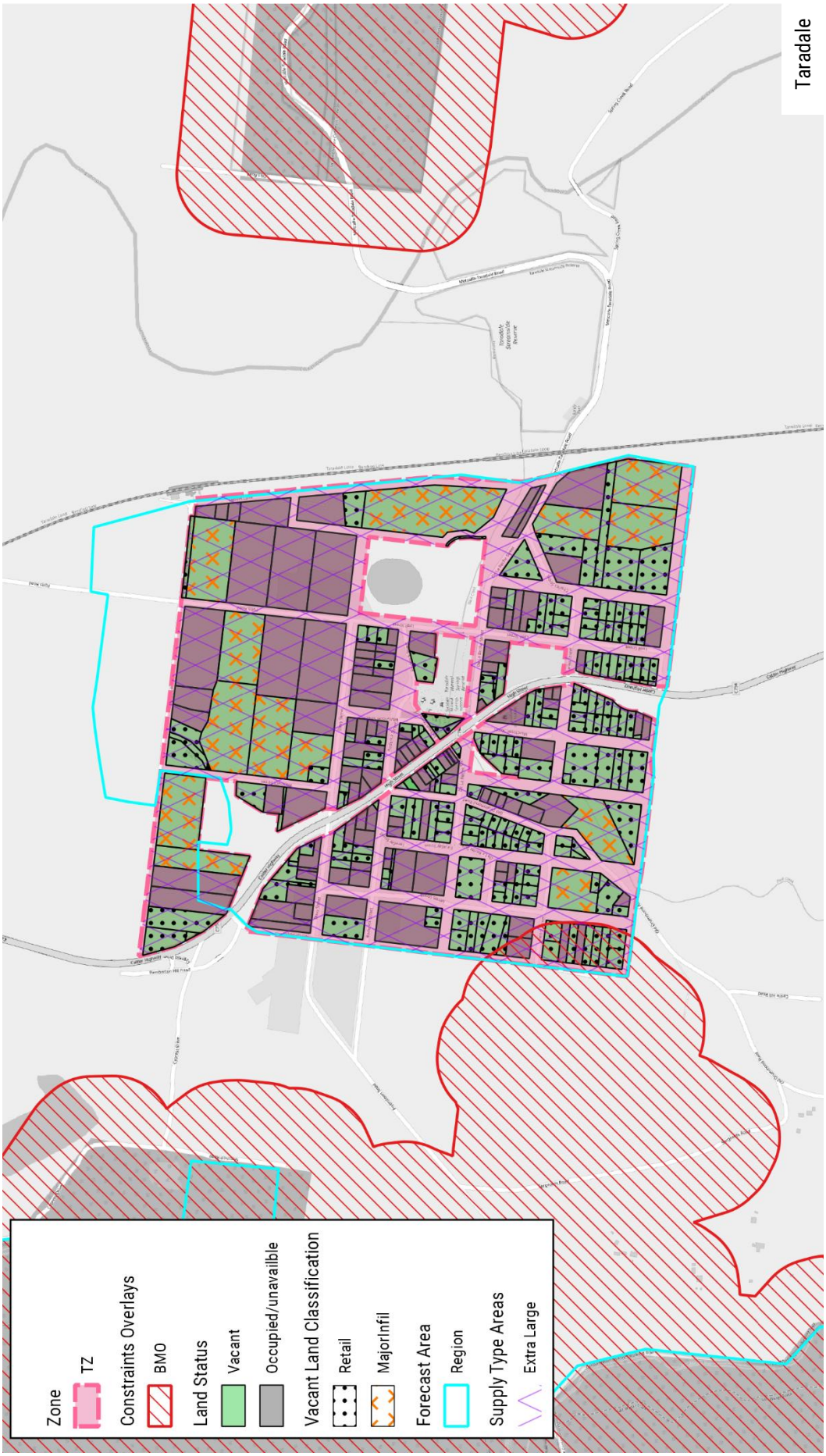
Forecast Area
Region
Supply Type Areas
Extra Large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Zone
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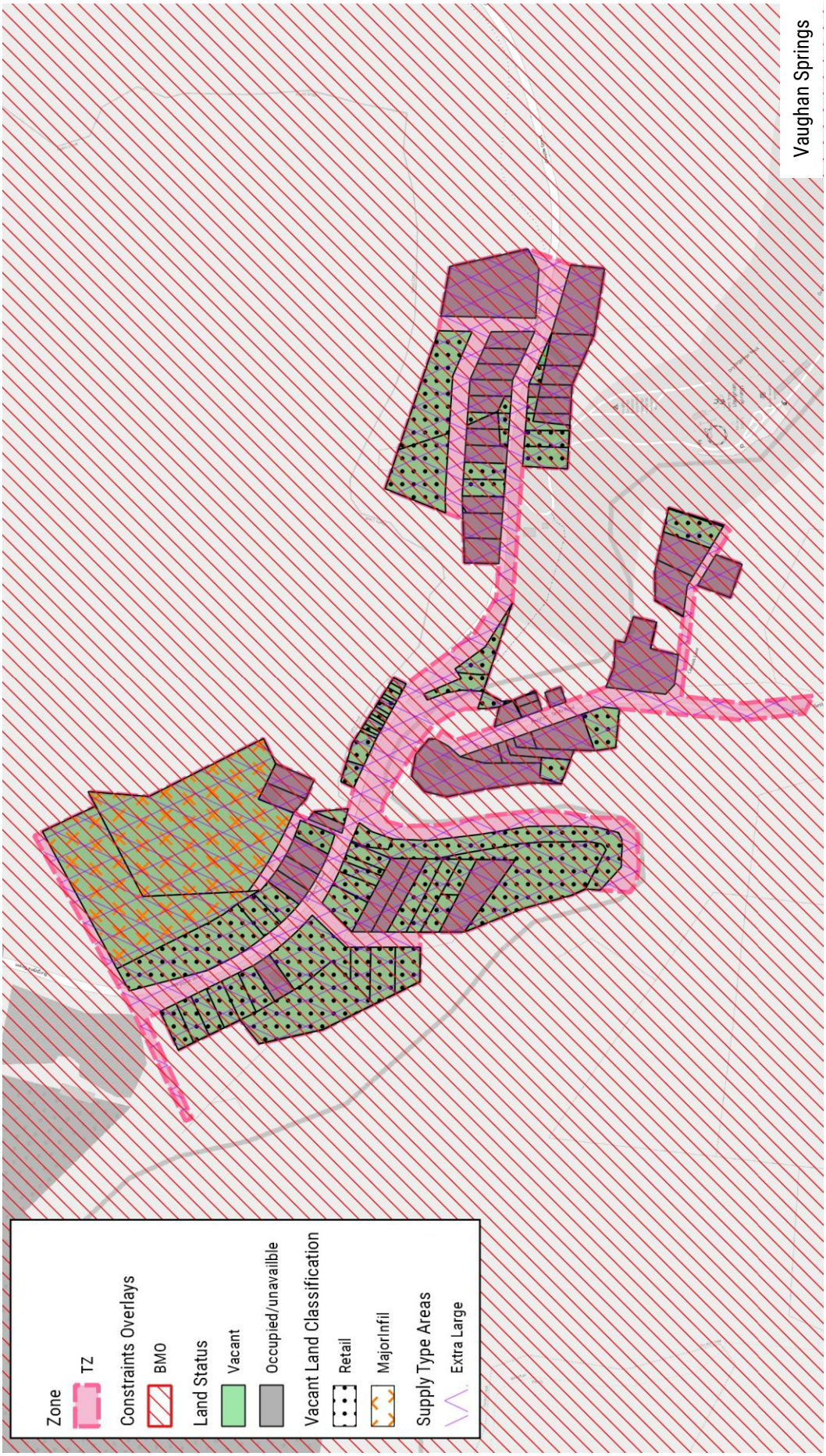
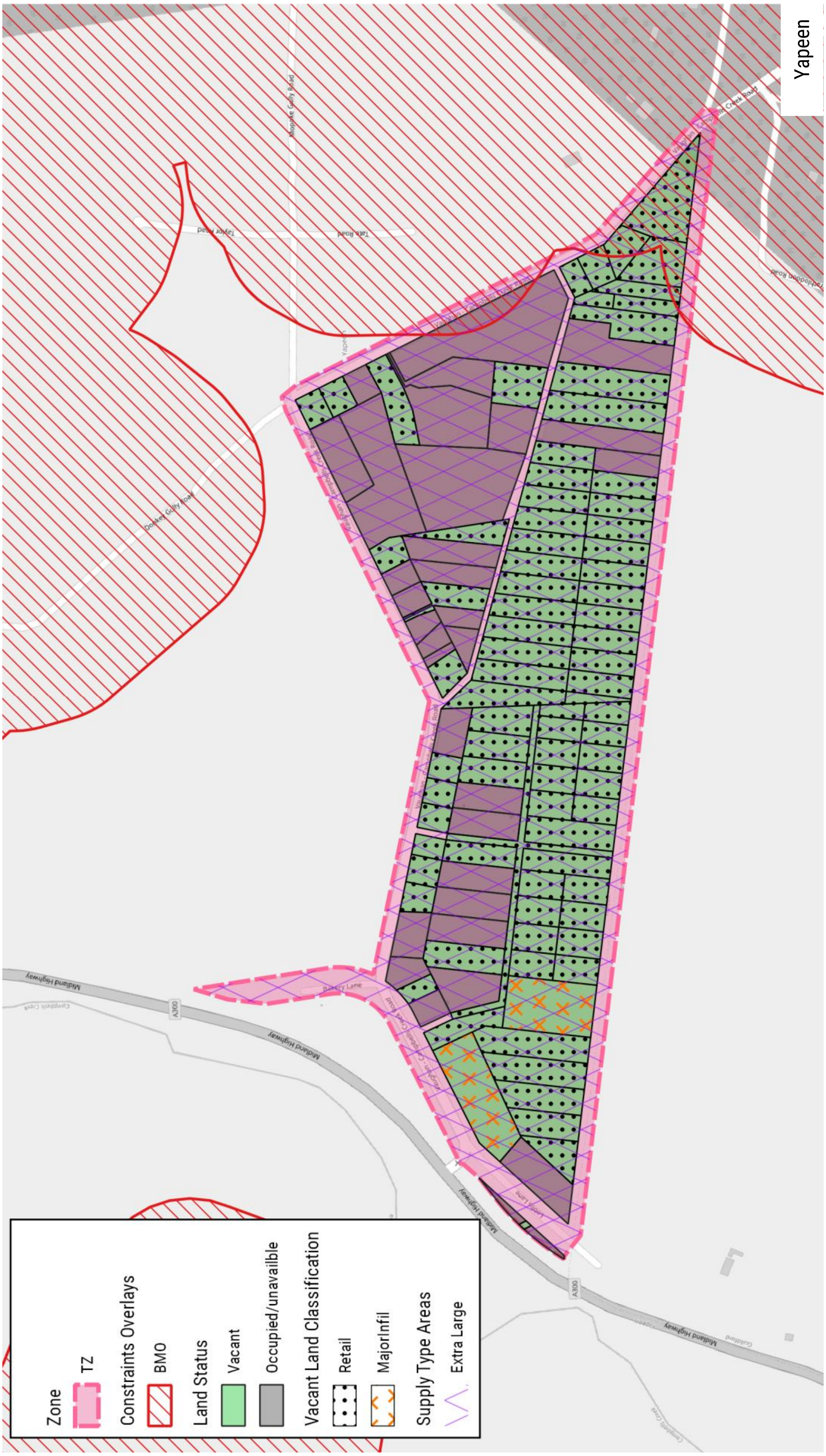
Region
Supply Type Areas
Extra Large


Vaughan Springs
Zone
TZ
Constraints Overlays
BMO
Land Status
Vacant
Occupied/unavailble
Vacant Land Classification
Retail
MajorInfil
Supply Type Areas
Extra Large

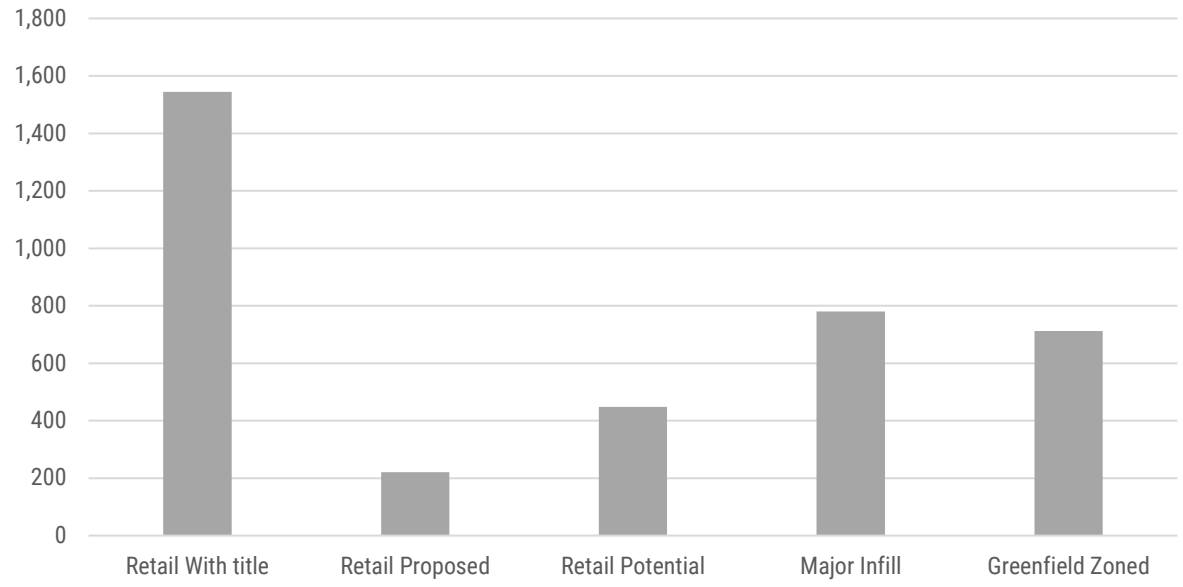

Yapeen
Zone
TZ
Constraints Overlays
BMO
Land Status
Vacant
Occupied/unavailible
Vacant Land Classification
Retail
MajorInfil
Supply Type Areas
Extra Large
Midland Highway
A300
Dookes Gully Road
Tate Road
Taylor Road

A high proportion, around 42 percent, of land supply are retail lots with a title (i.e. existing vacant lots that are available now) (Figure 3-1). Smaller infill lots, reflected as retail potential, could provide for around 450 lots.

Land identified as major infill and greenfield zoned areas account for around 40 percent of land supply in the municipality. These larger areas offer some of the best opportunities for larger coordinated land development, however timing and sequencing of the development of these areas is largely uncertain. Where major infill or greenfield areas are comprised from multiple parcels under separate ownership, additional levels of uncertainty are present.

In addition to the land supply outlined in the chart in Figure 3-1, there will also be supply provided within rural areas of the municipality. While not zoned for residential use, there are several areas in the shire, particularly along the Calder Corridor, that provide high rural amenity and have historically attracted high levels of demand for residential development. Other rural development will also occur on large agricultural parcels where planning permission is not required for the use of land for a dwelling. The land supply assessment accounts for this demand in non-residential areas through the forecasting process.

Figure 3-1 Townships land supply, Mount Alexander LGA 2021-2041



3.1 Selected township summaries

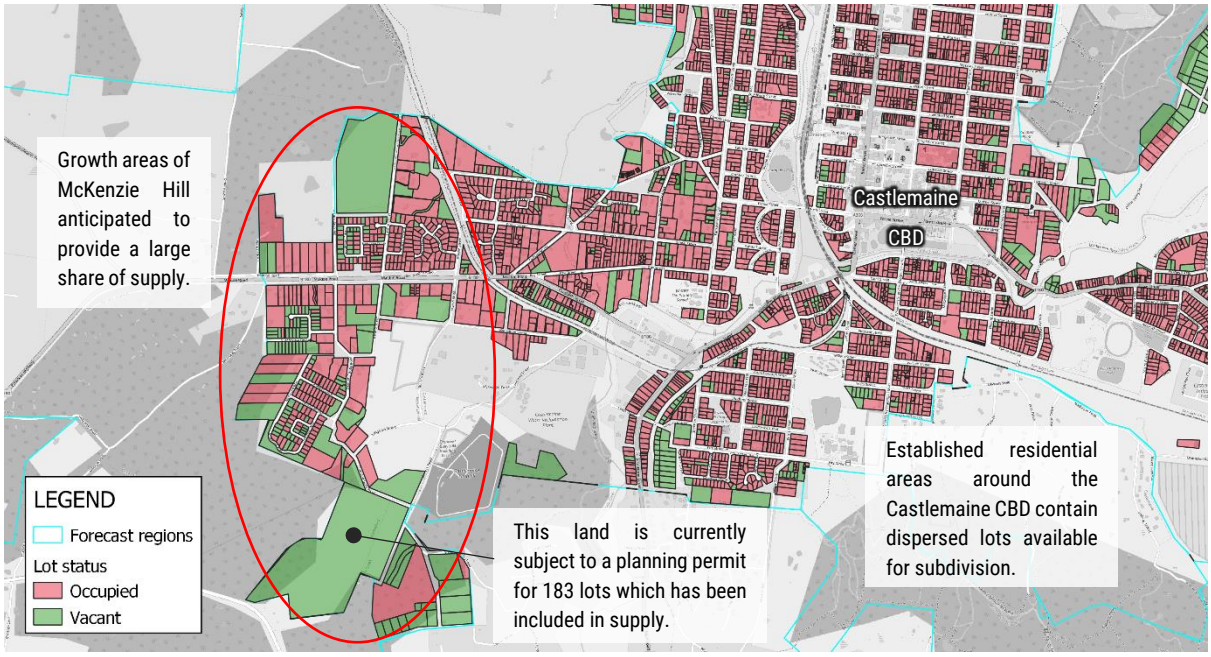
Castlemaine

The Castlemaine forecast area is the single main source of land for residential development in the municipality accounting for 26 percent of the LGA's supply. Castlemaine includes one of the municipality's main development fronts at the McKenzie Hill / Diamond Gully precincts. These precincts are anticipated to provide a large proportion of the area's new land over the medium to long-term (see Figure 3-2). However, Castlemaine also has a relatively large amount of existing vacant land that largely consists of smaller parcels distributed throughout established residential areas. The land supply assessment indicates around 670 vacant lots that sit below the defined subdivision threshold are available in Castlemaine.

Castlemaine's growth areas are forecast to provide a large proportion of standard size allotments (around 850 square metres in area). These areas are constrained by bushfire controls with the reduced development potential being reflected in supply figures.

The inner area of Castlemaine is the municipality's main source of smaller allotments (both existing and potential) with the number of vacant lots enabling supply of an estimated 320 small lots. Aside from a small number of lots impacted by flooding, and bushfire risk in the west, the majority of the Castlemaine area is largely unaffected by identified development constraints.

Figure 3-2 Castlemaine forecast area land supply



Campbells Creek

Campbells Creek is one of the municipality's other main growth areas. Land supply assessment anticipates Campbells Creek will be able to provide around 860 residential lots through to 2041. Campbells Creek currently has the highest number of lots which are part of active subdivision applications (certified plans), reflected in supply figures as lots becoming available between 2024-2026 (Figure 3-3).

The southern extent of Campbells Creek is the location of the identified growth area (Figure 3-4). This southern area has already experienced a degree of subdivision at standard densities, with undeveloped parcels anticipated to be similarly subdivided in the future. Areas on the west and east of Campbells Creek contain a mix of large to very large lots, some of which are interspersed with existing residences which will limit comprehensive redevelopment. Some of these areas will require extensive service extension to subdivide. The combination of factors in these areas of Campbells Creek are expected to result in a lower density of development.

Figure 3-3 New lots as part of subdivisions in progress

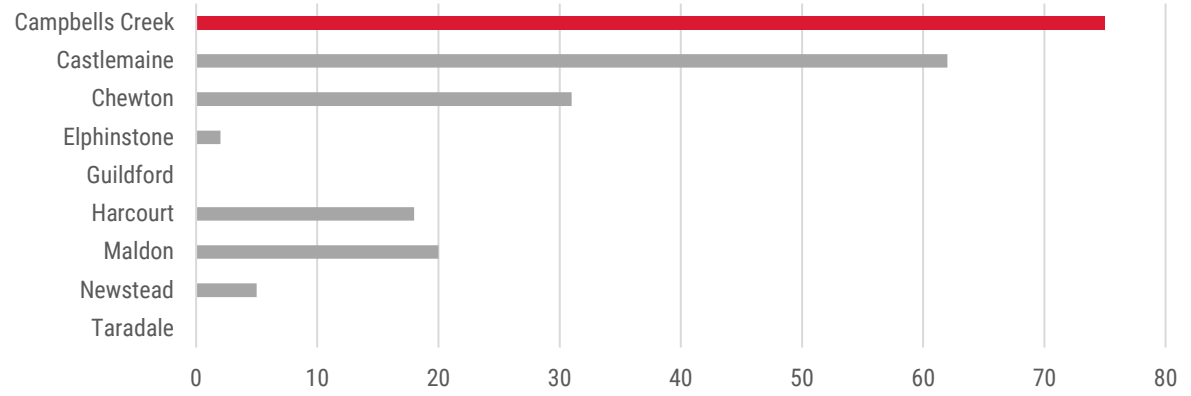
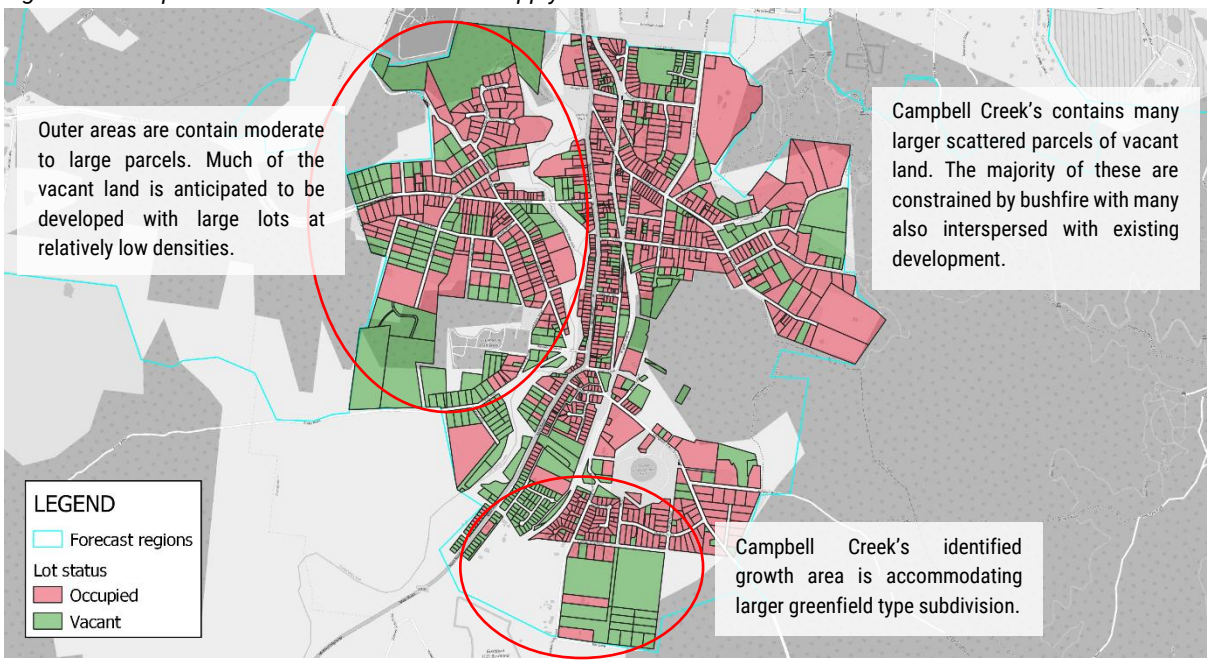


Figure 3-4 Campbells Creek forecast area land supply

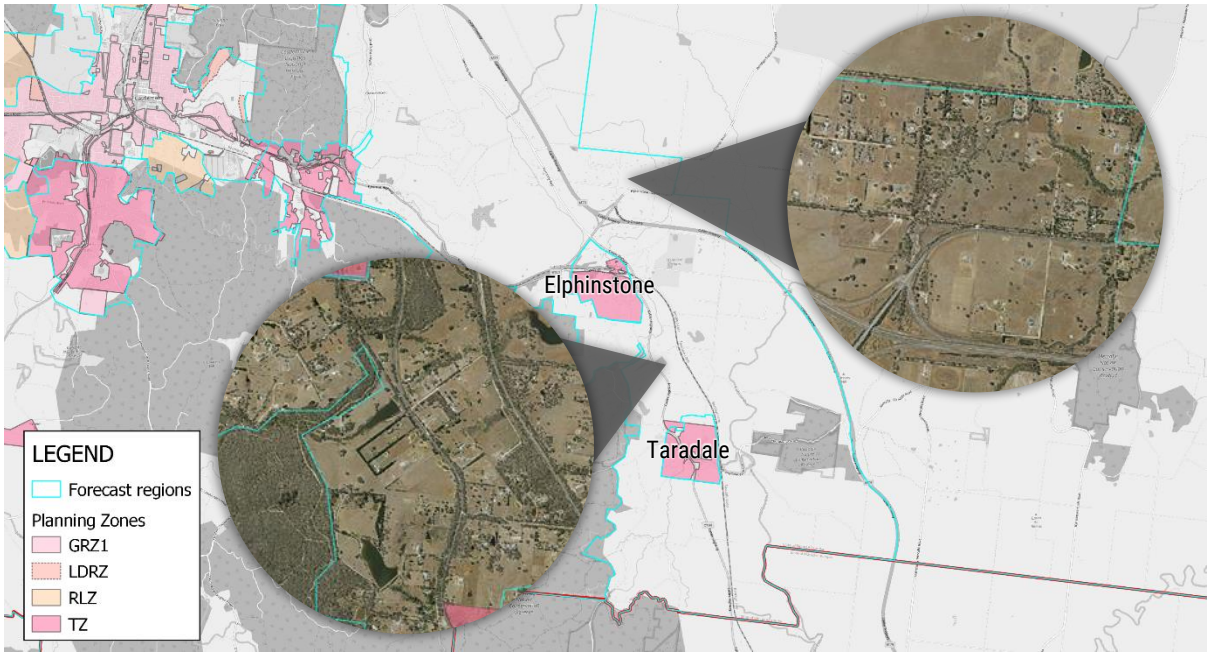


Calder Corridor Rural

The Calder Corridor Rural area is a region that contains non-residential land, primarily in the form of RLZ and FZ. Despite the non-residential zoning, many locations are relatively well developed with dwellings. The level of development through the Calder Corridor Rural area often displays a rural residential character rather than an agricultural character. While this area does not officially contribute to the LGA's supply of residentially zoned land, it is a notable area of supply (and demand) for residential development.

Outside the RLZ land surrounding Castlemaine, locations on the outskirts of Elphinstone, Taradale and Harcourt often display a rural living character (see Figure 3-5). The Calder Corridor Rural area is forecast to provide over 530 lots over the period to 2041, with around half being on land zoned RLZ and half providing for forecast demand in the FZ.

Figure 3-5 Rural residential development in the farming zone, Calder Corridor Rural area



Chewton

Chewton lies immediately to the east of Castlemaine. The pattern of residential development in Chewton is a result of its mining heritage and its location along a key transport between Castlemaine and Melbourne. Small lots are a feature of the land adjacent to Duke Street, after which the pattern of development transitions quickly to lots of various sizes and layouts.

For its size, Chewton has a substantial amount of available land. However, there is no identified growth area as exists for Castlemaine and Campbells Creek. The township is heavily constrained by bushfire being surrounded by the Castlemaine Diggings National Heritage Park. Natural features such as vegetation and topography, though not considered as part of the supply assessment, combined with the bushfire constraint will likely play a role in curtailing development potential in a practical sense.

Half of the residential land supply in Chewton is anticipated to be provided through existing vacant lots (Figure 3-6). Any subdivision is anticipated to be in a larger format given the character of development in the township and constraints outlined above.

Figure 3-6 Supply of lots in Chewton, 2021-2041

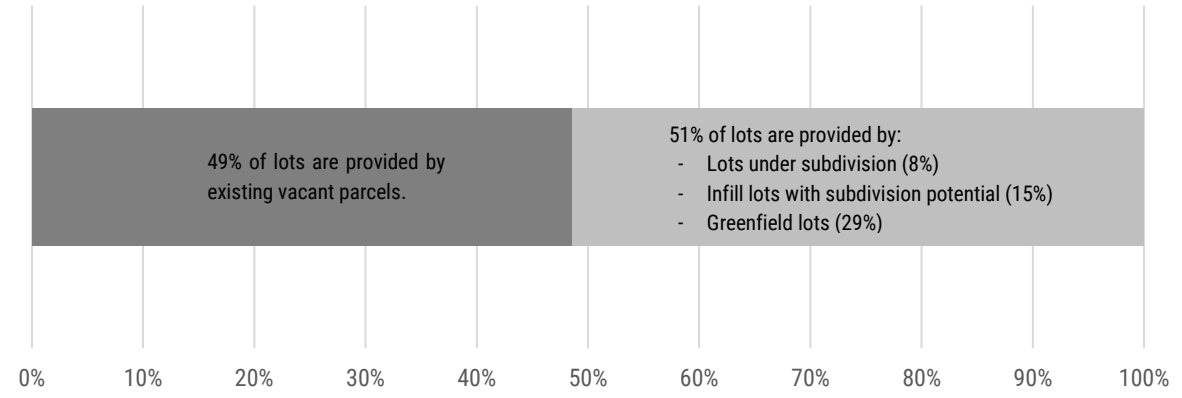
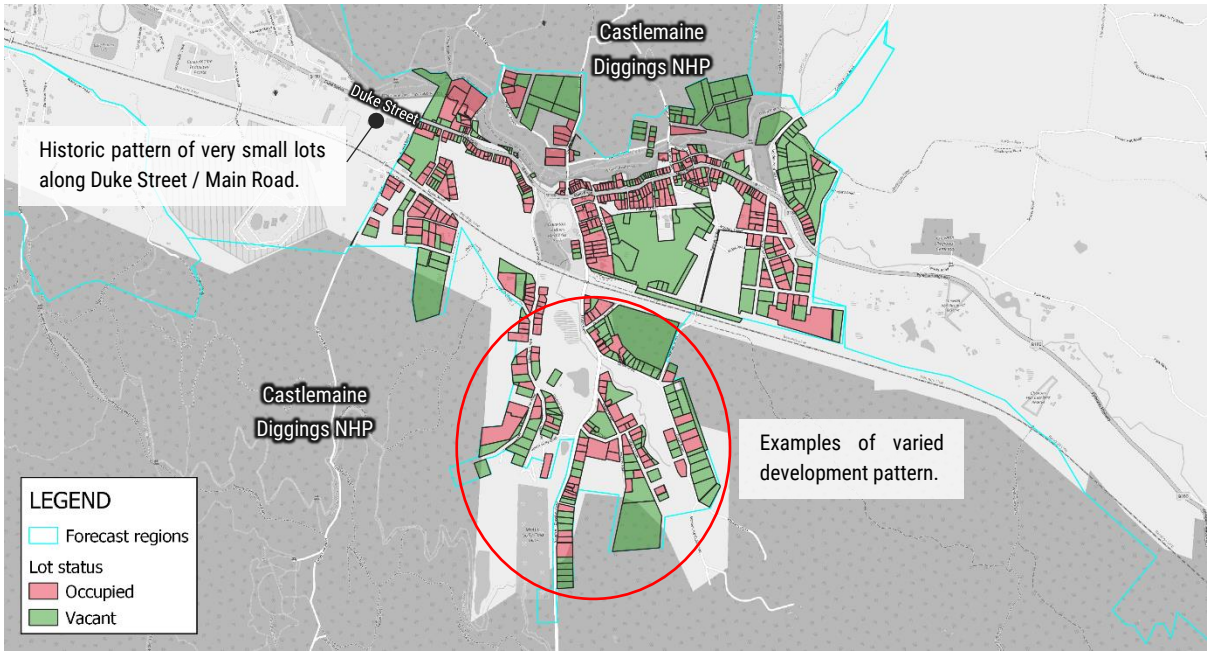


Figure 3-7 Chewton forecast area supply



Harcourt, Maldon and Newstead

Harcourt, Maldon and Newstead are the municipality's secondary townships, outside Castlemaine and its immediate surrounds of Campbells Creek and Chewton. While each of these secondary townships displays their own unique character and development, there are also consistencies in the supply of available land between them, particularly for Maldon and Newstead.

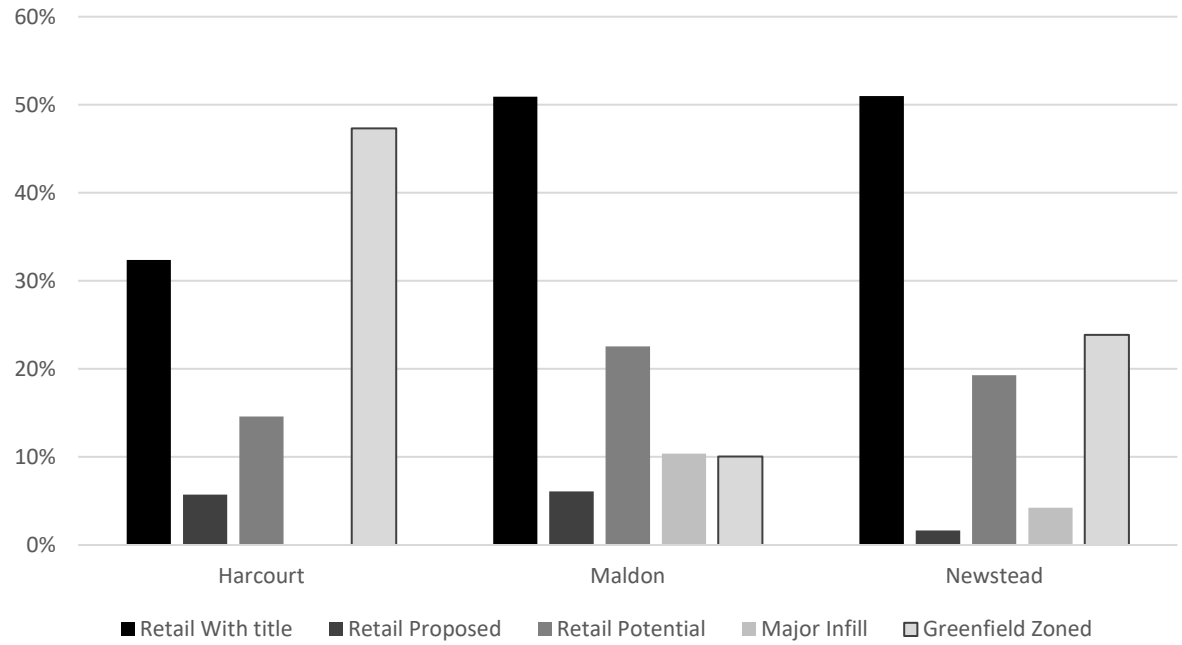
Each of the three townships are anticipated to provide between 300 and 330 residential lots from existing zoned land. Around half of the supply in both Maldon and Newstead is available as existing lots (retail with title), whereas a third of land in Harcourt is provided in this category (Figure 3-8).

Both Maldon and Newstead have a level of new supply provided by medium-sized parcels within the established urban area (retail potential). This demonstrates the availability infill opportunities within both of these townships to provide for future demand.

Newstead has a large amount of vacant residential land located proximate to the Loddon River. No formal flood overlay exists in Newstead to identify flood extent along the Loddon River. Hydraulic flood modelling prepared in 2017[2] for the Newstead levee was utilised to determine where flooding in the area would exceed 0.5 metres at the 1% annual exceedance probability. While the modelling was focussed around the immediate levee area and not the entire township, it does provide evidence of flooding constraints on several very large parcels reducing the overall supply in the township (Figure 3-9).

Harcourt is somewhat unique in the availability of relatively large parcels of zoned greenfield land. Many of these larger greenfield parcels are located to the south of the township. However, recent development activity has been concentrated at the northern extent of the township with new lots in the Pippin Court and Molly Drive subdivisions (Figure 3-10).

Figure 3-8 Categorisation of supply for Harcourt, Maldon and Newstead



[2] Water Technology 2017, *Newstead Levee Alignment – Modelling Assessment*

Figure 3-9 Newstead forecast area supply

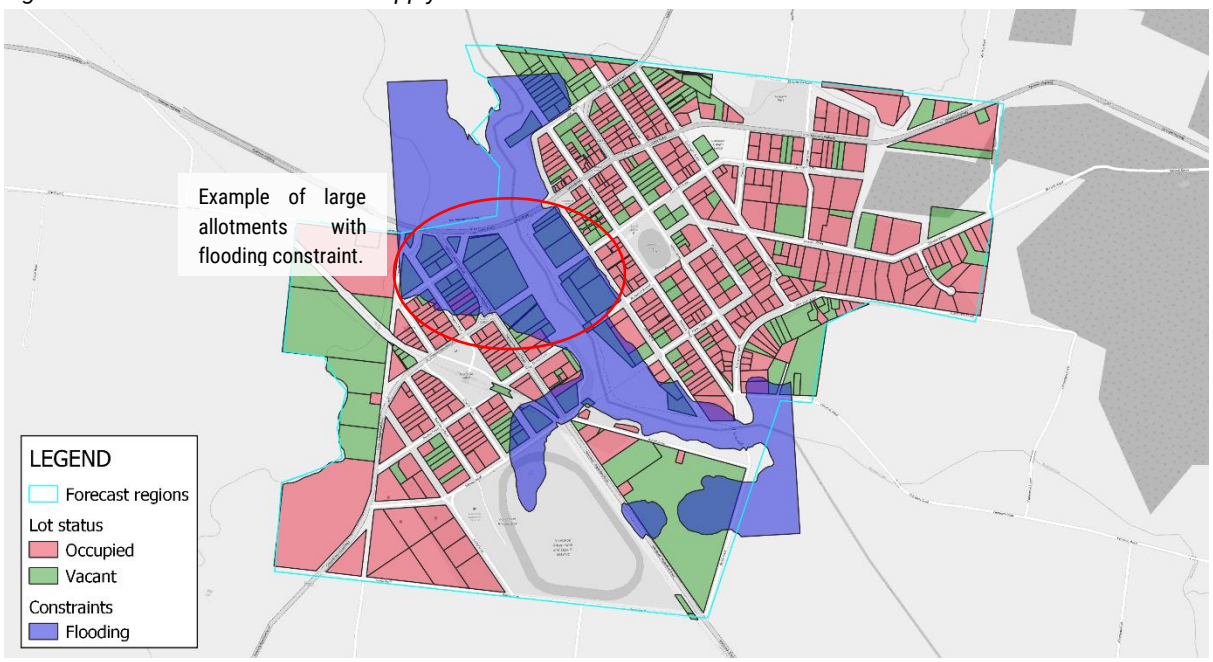


Figure 3-10 Harcourt forecast area supply

Small rural townships

Mount Alexander has nine smaller rural townships distributed across the municipality. These townships are unsewered, which is a considerable constraint on development of smaller parcels. There are numerous existing lots within these townships that were created as part of the original survey of the towns which will be constrained due to issues of wastewater disposal.

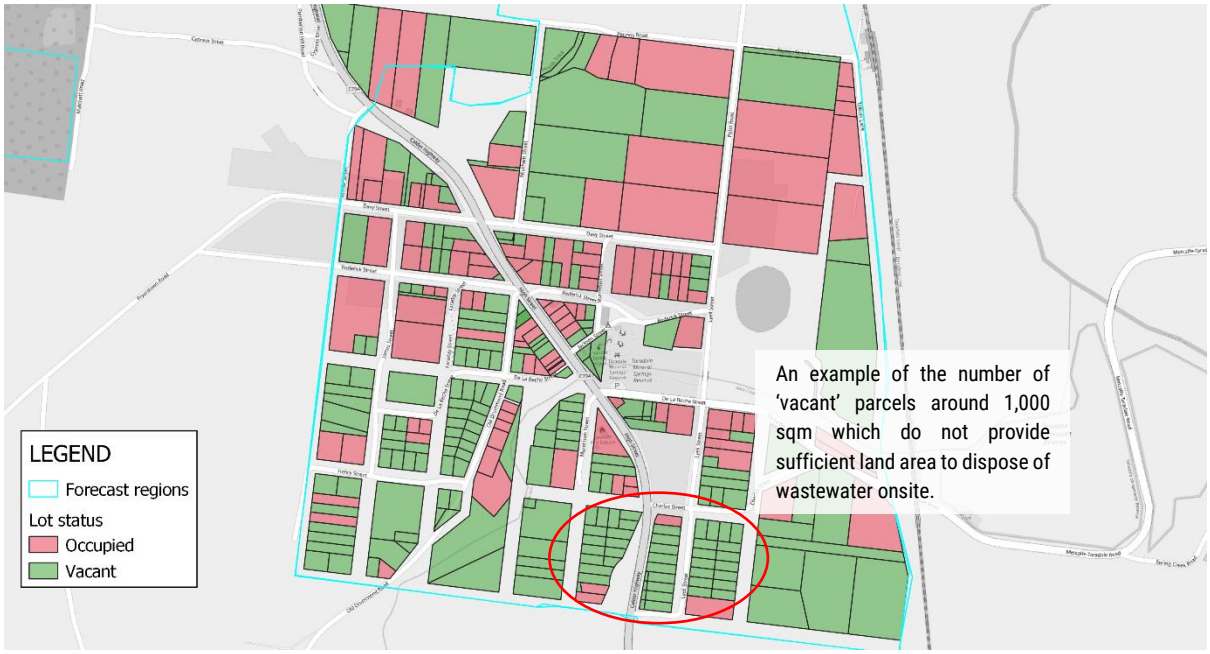
Ensuring residential development can appropriately manage wastewater on-site to prevent negative impacts on ground and surface water increases the minimum size that lots need to be able to accommodate a dwelling. This issue is present across the LGA's smaller townships where vacant lots will potentially need to be consolidated to create a parcel of sufficient area to address the issue of wastewater management.

Taradale and Elphinstone are two of the larger unsewered townships in the LGA. For a number of years these towns have been identified as growth areas for the municipality primarily due to their land supply and location on key transport routes of the Calder Corridor. However, issues of wastewater have constrained development and growth in these townships has been negligible. Until these townships are sewered, their growth potential will also be limited.

This issue is particularly evident in Taradale, which has a large number of vacant lots with an area of around 1,000 square metres (Figure 3-11). Given the local soil and climatic conditions, these smaller 'vacant' lots will need to be consolidated into larger parcels prior to any development occurring.

The supply assessment has considered all these smaller vacant lots under 4,000 square metres in unsewered townships as unavailable. While some of these may be consolidated and developed, there has been limited evidence of this occurring to date and has not been accounted for in the supply analysis.

Figure 3-11 Taradale forecast area supply



3.2 Unoccupied dwellings

In almost all locations, there is a proportion of the private dwelling stock that is unoccupied. Unoccupied dwellings are habitable buildings that for a range of reasons are not being utilised at a given point in time. This includes vacant houses, holiday homes, as well as newly completed but unoccupied dwellings or those due for demolition. In many cases, unoccupied dwellings in a location represent a form of latent supply.

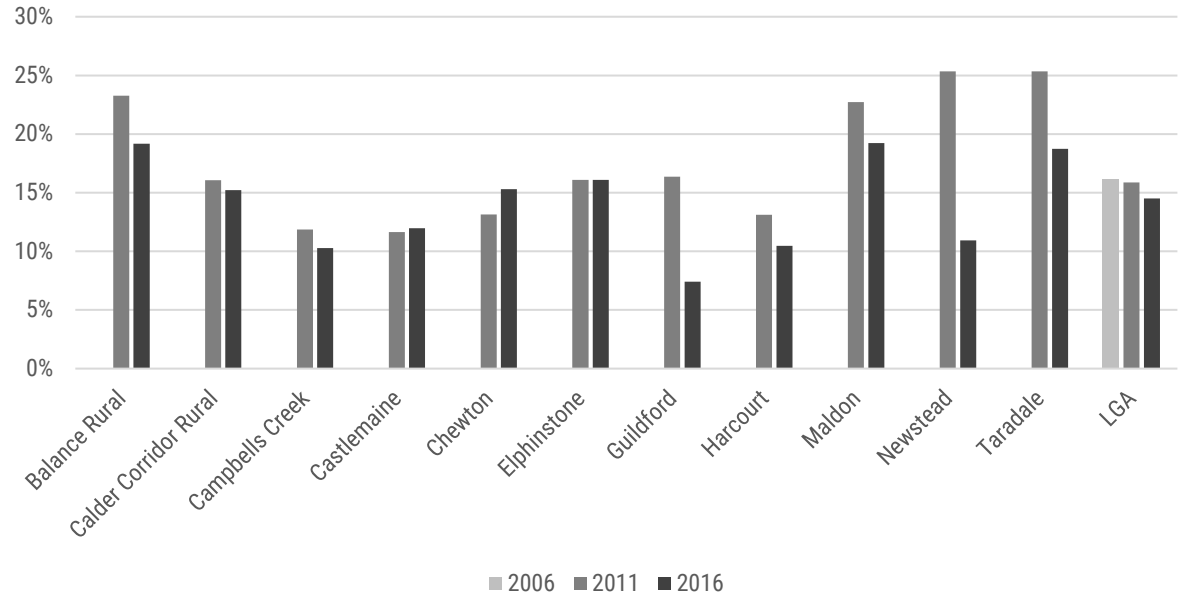
The proportion of occupied private dwellings relative to the total number of private dwellings provides an occupancy rate which can change over time. In areas where no new dwelling construction is occurring but there is evidence of high population growth, this can suggest that existing unoccupied dwellings are being occupied thereby increasing the occupancy rate and decreasing the rate of unoccupied dwellings. Occupancy rates can also increase where a lot of new construction is occurring and the majority of new dwellings are occupied, but the occupancy rates of existing dwelling stock remain consistent.

Conversely, the rate of unoccupied dwellings can increase (i.e. a declining occupancy rate) in locations where demand by permanent residents is low, which often manifests as high rental vacancies. Low occupancy rates also often occur in tourist destinations with high rates of second dwellings or holiday homes.

Historically, the proportion of unoccupied private dwellings in Mount Alexander Shire has ranged between 14.5% and 16.2% but has been declining over time (Figure 3-12). The proportion of unoccupied dwellings varies across townships and other forecast areas and has been over 20% in some townships.

Occupancy rates have not been included in the supply analysis but are accounted for in the demand analysis as an important input into dwelling forecasts. In some locations where the number of new dwellings is notably below what would be anticipated to accommodate population growth, this can result in a positive net absorption of unoccupied dwellings. Absorption is included in final estimates of supply and demand outlined further in section 5.

Figure 3-12 Historic proportion of unoccupied private dwellings, Mount Alexander Shire



Source: REMPLAN Community (derived from ABS Census of Population and Housing)

3.3 Supply analysis key points

- The Castlemaine – Campbells Creek – Chewton will continue to provide the majority of residential land supply, accounting for around 55% of residential land in the LGA.

- Rural areas in the shire will likely continue to provide a supply of land for residential development, particularly in the Calder Corridor where rural amenity is coupled with transport accessibility provided by the Calder freeway and arterial linkage to local townships and Castlemaine.

- The majority of residential land supply is likely to be provided by existing small vacant lots (retail with title) and subdivisions currently in progress (retail proposed), which combined will provide around 1,750 lots. Infill lots with subdivision potential (retail potential and major infill) are estimated to supply around 1,200 lots. Zoned greenfield parcels are anticipated to provide around 700 lots.

- Options for larger greenfield style residential development are likely limited to areas in Campbells Creek and Harcourt.

- Large parcels of land in Newstead are constrained by flooding, reducing potential supply.

- Smaller unsewered townships have large numbers of individual vacant allotments, however many are of insufficient size to adequately contain and treat wastewater on-site. Consolidation of lots will likely have to take place prior to development occurring.

4 Demand analysis

4.1 Total land demand

The total cumulative land demand across the Mount Alexander LGA is expected to result in around 2,750 lots being required by 2041 (Figure 4-1). Annual land demand across the shire is forecast to gradually decrease over time, from 166 lots in 2021 to 117 lots in 2041.

As the municipality's largest township, and containing one of the main short-term growth areas, the highest level of demand across the forecast areas is in Castlemaine with a total demand forecast of around 975 lots by 2041 (Figure 4-2). The non-residentially zoned Calder Corridor Rural forecast area along with the Campbells Creek forecast area are expected to have the second highest level of demand, each with around 370 lots required by 2041. The level of demand in the Calder Corridor Rural area is likely a reflection of the demand for lifestyle allotments in the shire, while the demand in Campbells Creek is due to it containing the LGA's other main growth area. Harcourt is also anticipated to attract relatively high levels of demand due to a combination of factors including, the availability of land, demonstrated demand and dwelling construction over recent years, and strategic intent for Harcourt to provide for a large share of the municipalities growth over the medium to long-term.

Land demand is a combination of a range of factors, such as the growth or decline in overall population, the structure of the population, and average household size. In Mount Alexander, the total population is forecast to expand by an average of around 200 people per year. However, the annual growth is forecast to decline somewhat from 2023 through to 2028 before picking up closer to the forecast long-term average from 2029. For individual townships, similar levels of population growth can result in lower land demand due to higher average household size. The proceeding section 4.2 outlines some of the key factors affecting land demand in more detail.

Figure 4-1 Land demand for residential dwellings, Mount Alexander Shire

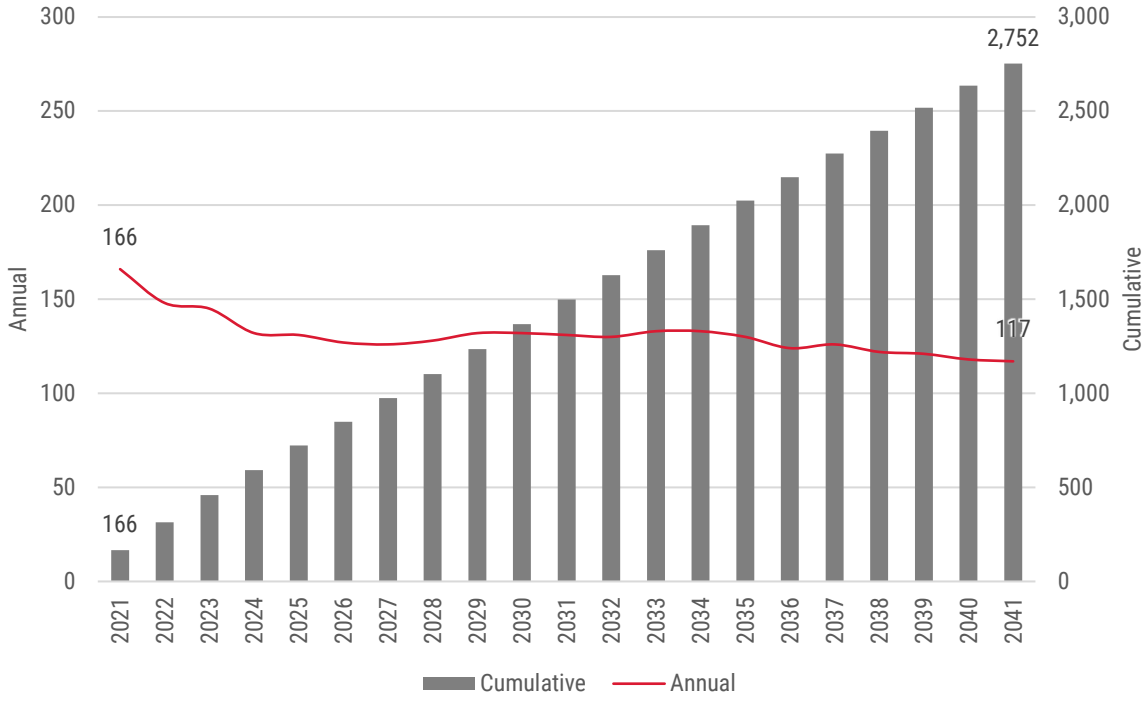
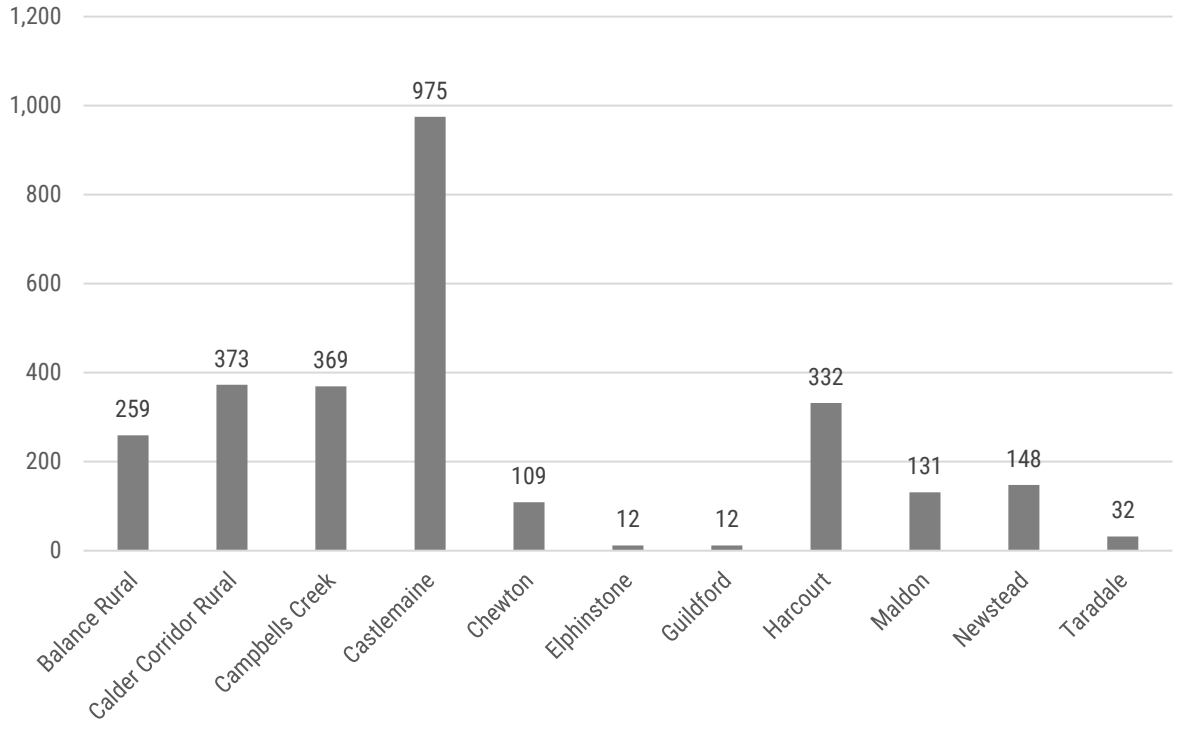


Figure 4-2 Total forecast land demand by forecast area, 2021-2041



4.2 Drivers of land demand

Total population

Castlemaine is anticipated to accommodate the majority of population growth over the next 20 years to 2041 with a net increase of around 1,400 new residents. The annual average growth rate in Castlemaine is similar to the growth rate of the LGA overall which is expected given it is a major component of the municipality's growth. However, the growth rate in Castlemaine is modest compared to several other areas in the LGA.

As a small town with a high level of demand, and capacity to accommodate that demand, Harcourt is forecast to be the fastest growing region in the LGA with an annual average growth rate of 3.9%. Harcourt is also forecast to have the second highest increase in total population (around 780 persons), beyond that of Campbells Creek (around 450 persons) and the Calder Corridor Rural forecast area (around 500 persons).

Overall, average annual population growth across the LGA is anticipated to be 0.9 % through to 2041. By comparison, between 2012 and 2021 the official population growth of Mount Alexander Shire averaged 1.25%[3] per annum.

REMPLAN forecasts for the Mount Alexander municipality are higher than the State Government's official population projections[4], which are provided out to 2036 (Figure 4-4). By 2036, REMPLAN estimates that 23,320 will be living in the Shire, an additional 1,506 people above what is projected by the State Government.

The annual average growth rate of REMPLAN estimates between 2016 and 2041 is 0.98%, compared to VIF annual average growth rate of 0.67% over the provided forecast period between 2016 and 2036. As additional context, historic annual growth rates from the official estimated residential population for Mount Alexander Shire between 2012 and 2021 has been 1.25%, double the growth rate of official VIF projections.

REMPLAN estimates of population growth have been used as a basis for demand in this report rather than projections prepared by the State Government as it is considered that the REMPLAN forecasts provide a more regionally specific and up to date estimate of future population growth. State Government projections, by necessity, apply a top-down approach with localised input largely limited to information gathered by the State Government on land supply and patterns of residential development. REMPLAN's forecasts have been developed in close consultation with MASC providing a much more nuanced assessment of demand and constraints than is incorporated into State Government projections.

State Government projections were also completed prior to the COVID-19 pandemic which has resulted in major changes to population movements, particularly the shift in demand out of metropolitan areas and into regional areas. REMPLAN's forecasts incorporate these more recent shifts in population, where State Government projections do not.

[3] ABS Regional Population, 2020
[4] DELWP, 2019 - *Victoria in Future 2019*

Figure 4-3 Population and annual average growth rates, 2021-2041

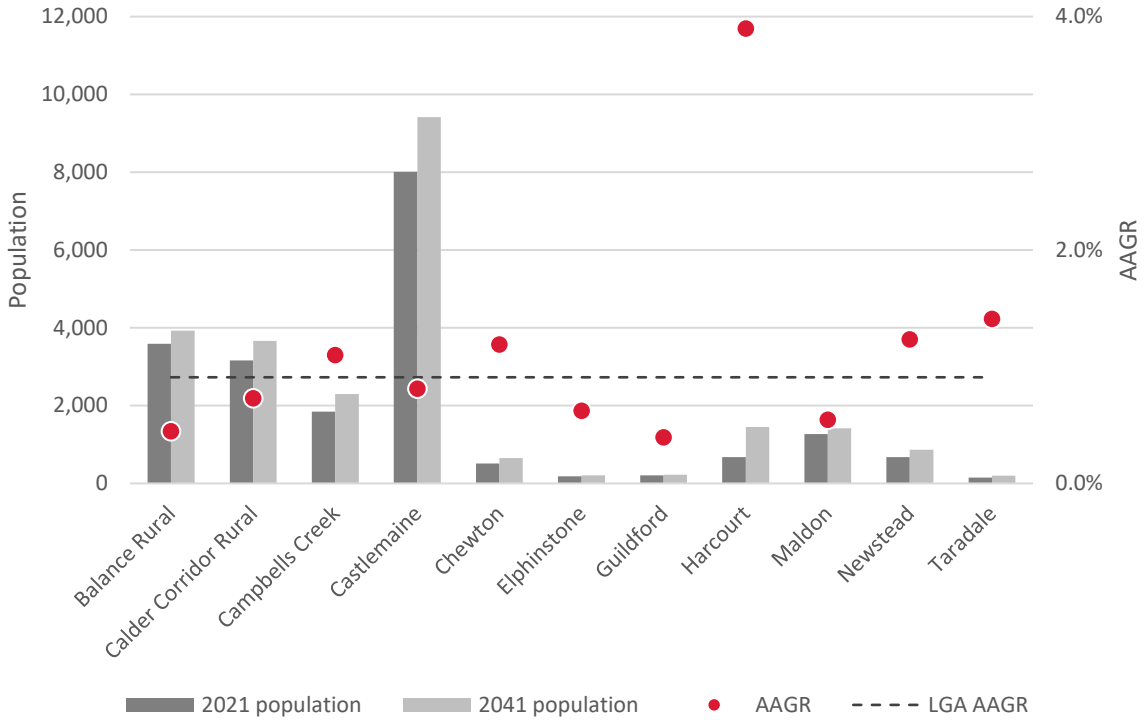
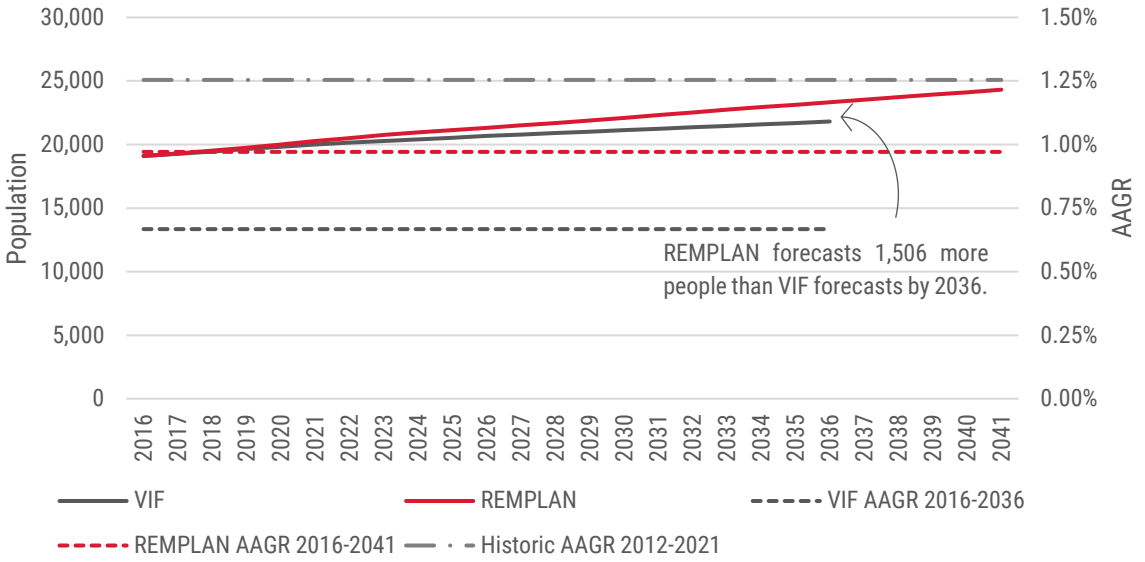


Figure 4-4 Population and annual average growth rates, REMPLAN vs VIF 2016-2041



Sources: VIF – Department of Environment, Land, Water and Planning (VIF2019); ABS 2022, Regional Population; REMPLAN, 2022.

Migration

Population change is a result of three main factors, being the number of births, the number of deaths, and migration. Of these three factors migration plays the most important role for the vast majority of locations across Australia.

Mount Alexander has been experiencing positive migration for at least the last 20 years. Net migration has been consistently exceeding 200 people per year since 2012, with several years reaching over 300.

Over the 20 years to 2041, net migration in the Mount Alexander LGA is forecast to generally range between 230 and 300 persons. However, net migration in the immediate future is anticipated to be slightly inconsistent. The trend in rising net migration to 2021, which has been spurred by people moving to the region through COVID, is forecast to decline in 2022 due to a slowdown in building approvals. The immediate increase in 2023 is predominantly explained through the opening of an expansion at the Loddon Prison (part of the Castlemaine forecast area). However, important to note is that this increase in the prison population does not translate to dwelling and land demand.

Figure 4-5 Net migration, Mount Alexander Shire 2016-2041

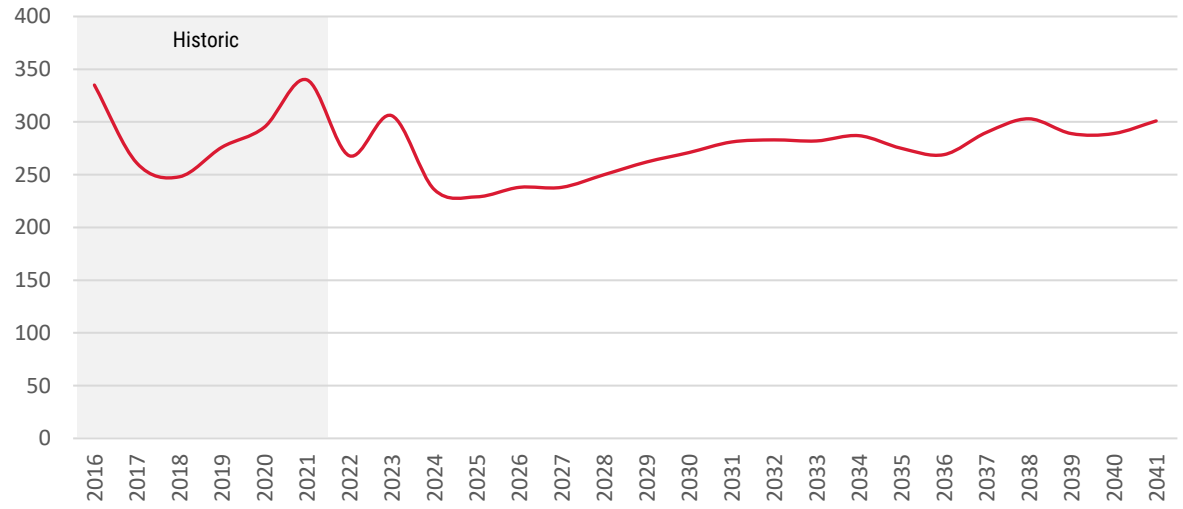
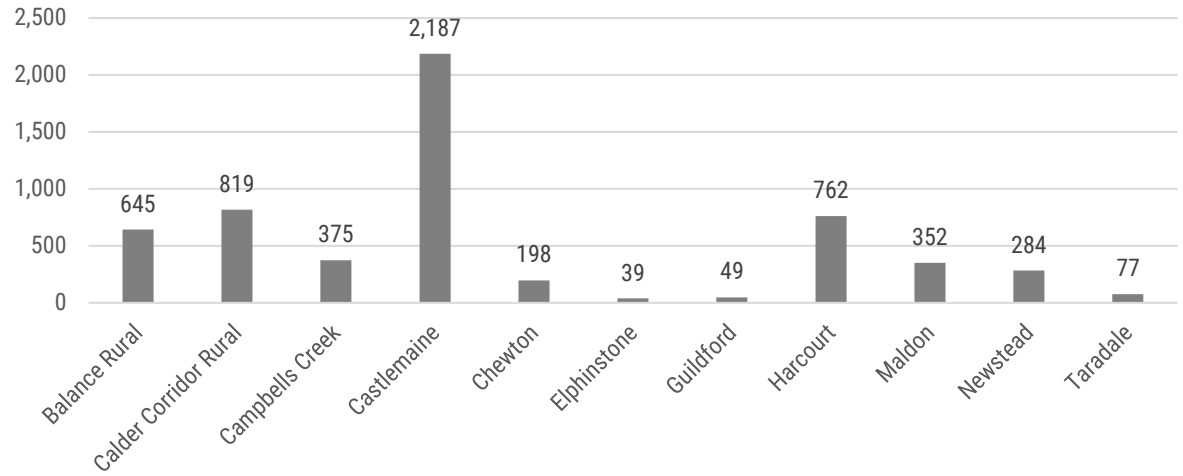


Figure 4-6 Net migration by forecast area, 2021-2041



Average household size

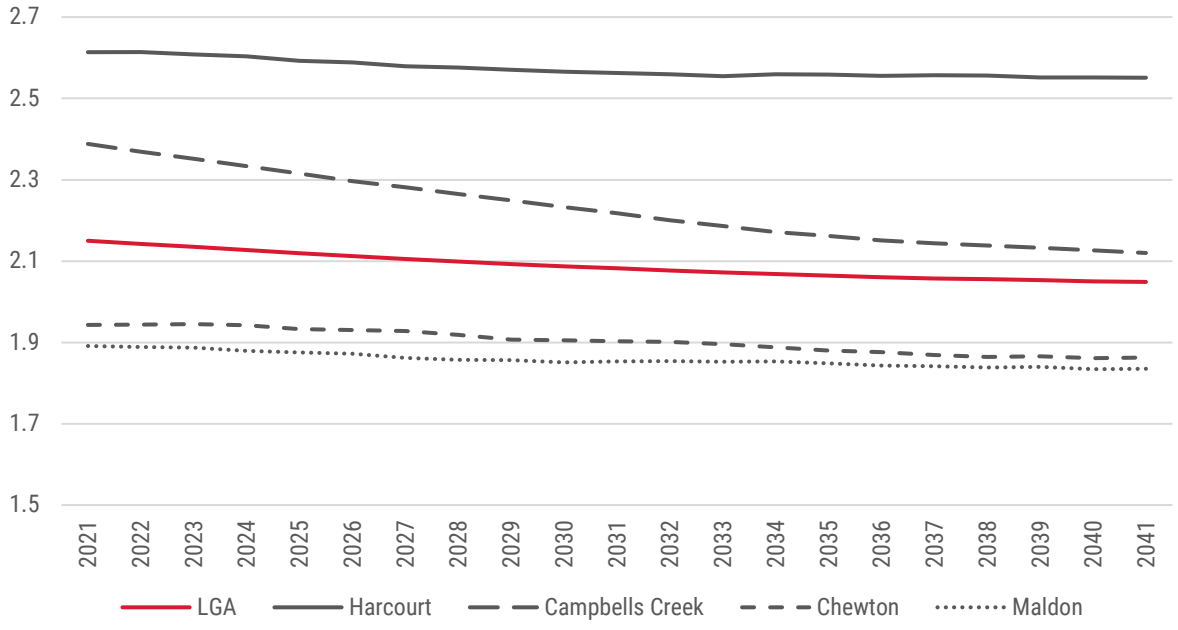
The average number of persons per dwelling is an important factor in determining demand for dwellings. In a regional area, such as Mount Alexander, dwelling demand translates almost directly into demand for land given the lack of high-density dwelling development.

The average number of persons per dwelling across the LGA is forecast to decline from 2.15 in 2021 to 2.05 in 2041 (Figure 4-7). This contraction in household size is the result of the changing structure of the population which is ageing overall.

Across the municipality, individual areas are expected to differ significantly in terms of both the average household size and change in household size over time. Harcourt is expected to maintain the highest average household size ranging from 2.61 in 2021 down to 2.55 in 2041. This high average number of persons is due to the household structure in Harcourt which has a higher proportion of family households with children than other townships, a household structure which is anticipated to continue as new development comes online in Harcourt. This type of household is typical in new development areas which generally attract young families.

By comparison, Maldon is anticipated to maintain the lowest number of persons per dwelling. In contrast to Harcourt, Maldon has a high proportion of lone person households (around 40% of households). Chewton, Castlemaine and Newstead also maintain a relatively high proportion of lone person households which results in a lower average number of persons per household in these locations (Figure 4-8).

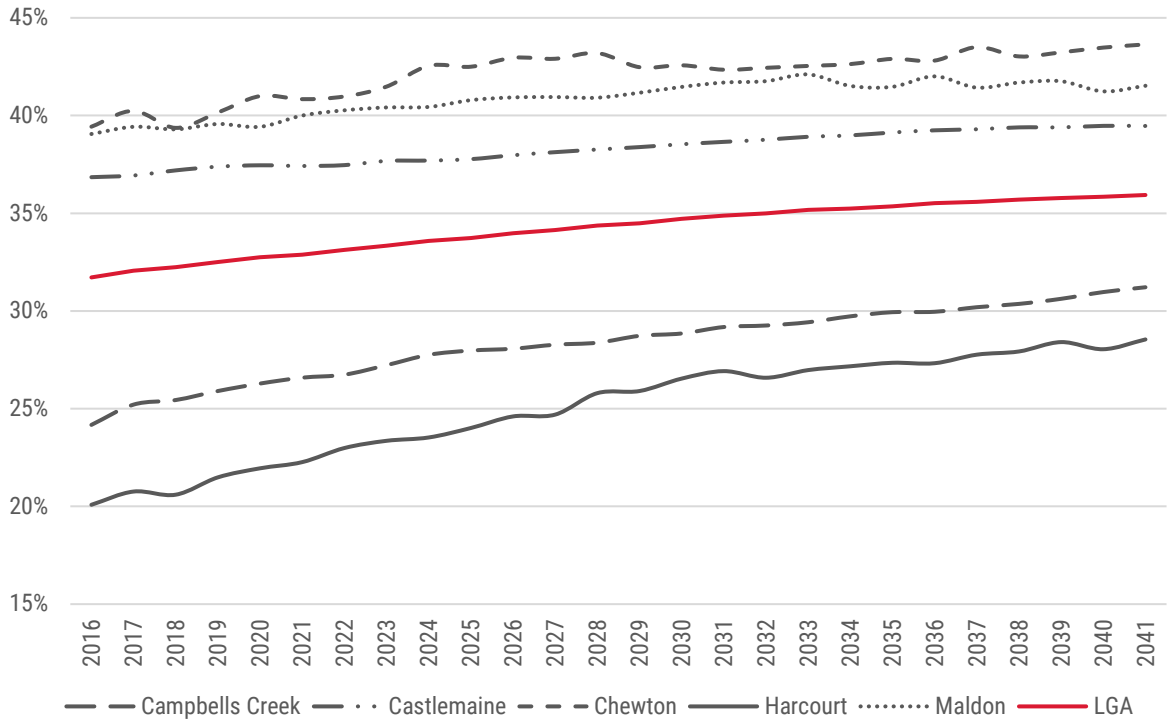
Figure 4-7 Average persons per dwelling, selected regions, 2021-2041



The proportion of lone person households is forecast to increase across all forecast regions. The increase in lone person households is largely a result of the aging population, and has implications for land supply, suitability of dwelling stock (including size, location, design, and services), as well as provision of services in given areas.

Chewton and Maldon are forecast to have the highest proportion of lone person households in the municipality both being over 40% from 2021. Harcourt and Campbells Creek currently have relatively low proportion of lone person households. However, the proportion of lone person household in both areas grow more rapidly than the LGA average over the forecast period as the aging profile begins to have a stronger influence than the smaller number of incoming residents with younger profiles.

Figure 4-8 Proportion of lone person households as share of total households, selected forecast areas



4.3 Demand analysis key points

- Total demand for land across the LGA is forecast to be around 2,750 lots, an average of 131 lots per year from 2021 through to 2041.

- Total demand for land across the LGA excluding the rural forecast areas is around 2,120, an average of 101 lots per year from 2021 to 2041.

- The Calder Corridor Rural forecast area is one of the main areas of residential demand across the municipality despite its non-residential zoning. Much of the demand is being met through land in the FZ despite policy within the planning scheme aiming to discourage such development. A review of planning policy for this area may strengthen current objectives to limit development or identify appropriate locations for such development to occur.

- Average household size across the shire is decreasing as the proportion of lone person households grows. Policy responses and initiatives to support the provision of dwelling stock that meets the needs of the future population should be considered at an early stage.

5 Results

The combination of land supply versus land demand for residential development provides an indication of the balance of residential land that will be available over the forecast period.

Results of the supply and demand assessment for the Mount Alexander LGA indicate that there is more than 30 years of land supply based on forecast demand. Based on the combined forecast demand across the entire municipality, including rural forecast areas, the anticipated supply would take 33 years to consume. When the rural forecast areas are excluded, supply is anticipated to take 35 years to consume.

The outcome of the supply and demand assessment for all land is illustrated in the chart in Figure 5-1. Table 5-1 summaries the results for all forecast areas, and all areas excluding rural forecast areas. While the Balance Rural forecast area does contain residentially zoned land, the amount of supply has no significant impact given the amount of land available relative to demand.

Figure 5-1 Supply and demand, all land, Mount Alexander Shire

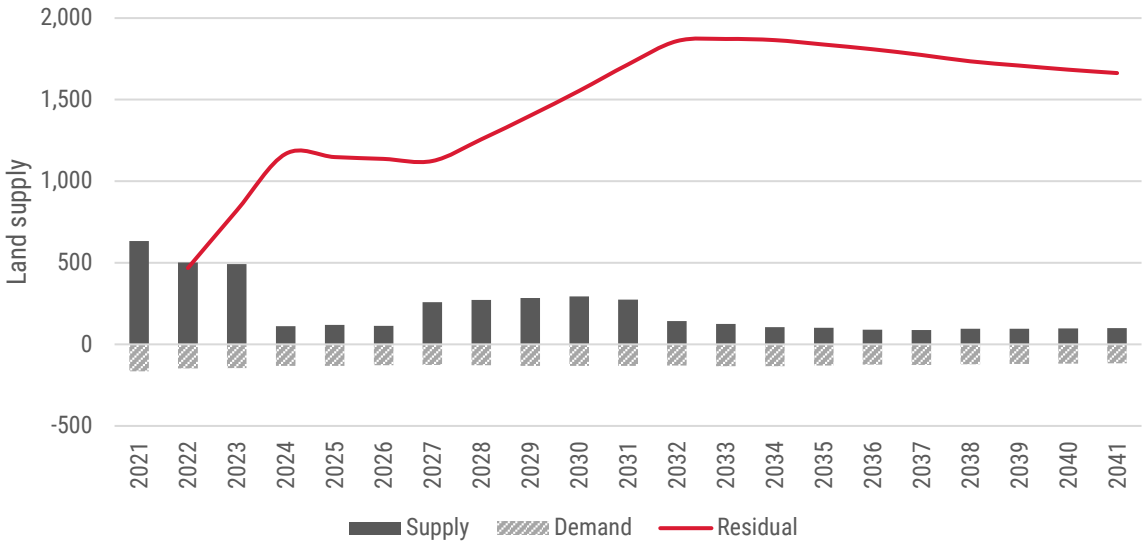


Table 5-1 Summary of supply and demand, Mount Alexander, 2021-2041

	All forecast areas		Excluding rural forecast areas	
	Total	Annual average	Total	Annual average
Land supply	4,342	207	3,512	167
Net dwelling supply*	4,397	209	3,540	169
Land/dwelling demand	2,752	131	2,120	101
Residual land	1,645	78	1,420	68
Years of supply^	**33.1**		**34.8**	

*Includes land supply and dwelling absorption

^Calculated as: Land supply ÷ Land/dwelling demand annual average

For individual townships, the outcomes of supply and demand result in a range of outcomes. Campbells Creek is anticipated to have the highest overall supply of land. Despite having one of the highest levels of demand, Campbells Creek has a large number of vacant parcels which result in high residual supply. The balance between total potential supply and average annual demand suggests Campbells Creek has around 49 years of residential land supply.

The smaller townships, many of which are located in the Rural Balance forecast area, along with Elphinstone, Taradale and Guildford, are not anticipated to see the type of speculative development that occurs in growth areas. As discussed in section 3.1 above, there are often many vacant lots in these small townships, but development potential of individual parcels is limited due to issues around wastewater disposal. It is anticipated that as demand requires, individual parcels may be consolidated to create supply. As it stands, current supply in all of these smaller townships will provide for anticipated demand for more than 24 years.

Guildford and Elphinstone both have low total supply but also very low demand, resulting in an estimate of over 115 years and 51 years of supply respectively. For Guildford, given the low number of total supply (66 lots over the forecast period), a small increase in annual demand can quickly reduce the number of years supply in this township. Elphinstone also has low total supply (29 lots), but the township does have a higher number of small vacant lots than Guildford which have been excluded from supply that could potentially be consolidated to provide additional supply as demand requires.

Of all the forecast areas, Harcourt is anticipated to be the most constrained with 20 years of supply. Currently available land (retail with title) in Harcourt exceeds annual demand in the short term and provides a buffer for future years 2024 (Figure 5-2). However, for the majority of years from 2024 annual demand is anticipated to exceed annual supply reducing the remaining stock of residential land.

The chart in Figure 5-3 illustrates the balance of land supply at the start and end of the forecast period for each forecast area. Table 5-2 utilises total land supply and annual average demand to calculate the estimated number of years supply of land in each forecast area.

Figure 5-2 Forecast annual supply vs annual demand, Harcourt 2021-2041

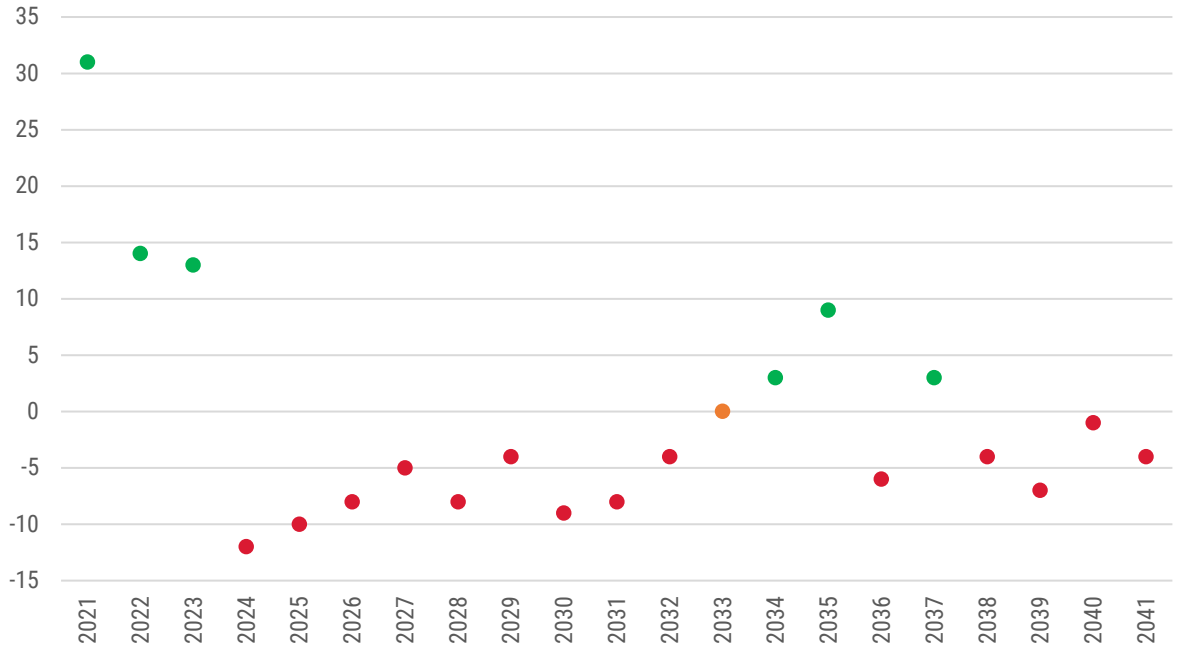


Figure 5-3 Land supply balance by forecast area

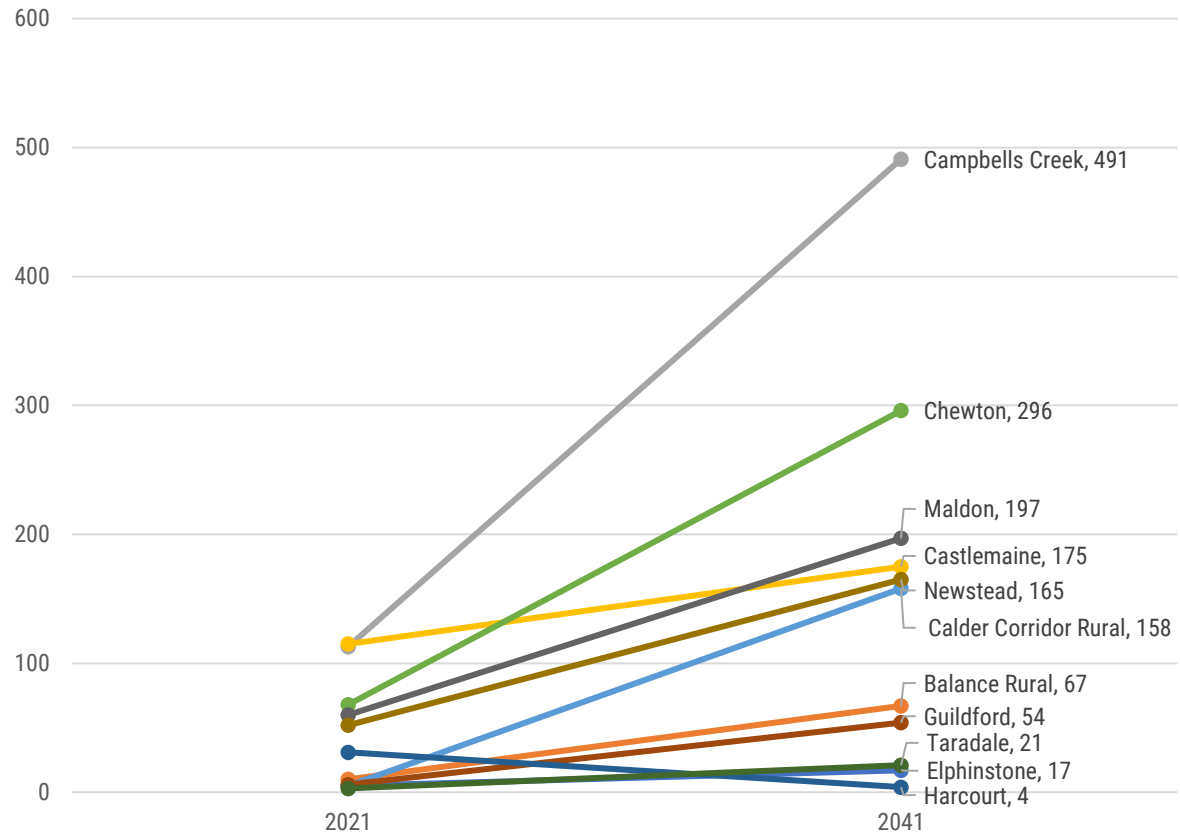


Table 5-2 Summary of supply and demand, forecast areas, 2021-2041

Forecast area	Land supply 2021-2041	Annual average land demand 2021-2041	Years of supply
Balance Rural	299	12.3	24
Calder Corridor Rural	531	17.8	30
Campbells Creek	860	17.6	49
Castlemaine	1,150	46.4	25
Chewton	405	5.2	78
Elphinstone	29	0.6	51
Guildford	66	0.6	116
Harcourt	315	15.8	20
Maldon	328	6.2	53
Newstead	306	7.0	43
Taradale	53	1.5	35

5.1 Results key points

- Land supply across the LGA and each forecast area is adequate to provide for 15 years of residential land. 'Total' supply of residential land is not exhausted over the 20-year forecast and will potentially provide at least 35 years of land supply based on current demand.

- Based on total land supply and average annual demand across the whole LGA, including rural forecast areas, there is around 33 years of land available.

- Supply of land in smaller townships, such as Guildford, Elphinstone and Taradale, is relatively low but the area has also sustained low annual demand. Low demand results in long period of supply, up to 115 years in Guildford. Small changes in demand could, however, reduce the number of years supply relatively quickly.

- Castlemaine has the highest levels of demand (annual average of 46 lots a year) and the second lowest years of supply (around 25 years).

- Harcourt is the most constrained township, with 20 years of residential land supply.

Appendix A – Forecast methodology

Methodology process

The REMPLAN process uses a combination of "top down" and "bottom up" methodology to develop the forecasts for each of the sub geographies that form the LGA.

Modelling of the underlying drivers of population change – namely, fertility rates, mortality rates and net migration – are undertaken individually using age and gender specific models.

The models are estimated separately for females and males by single year of age, this method captures the full dynamism of the evolving demography of the region.

Population change is combined with understanding the household formations that are specific to that geography i.e., lone persons households, couples only, families etc and this is then overlaid with identified future land supply in the region (infill development, rural residential, urban residential) and the timing of this supply of when it can be bought to the market to accommodate any future population.

Localised input, such as business and employment drivers, local planning strategies and infrastructure also influence population growth in a region.

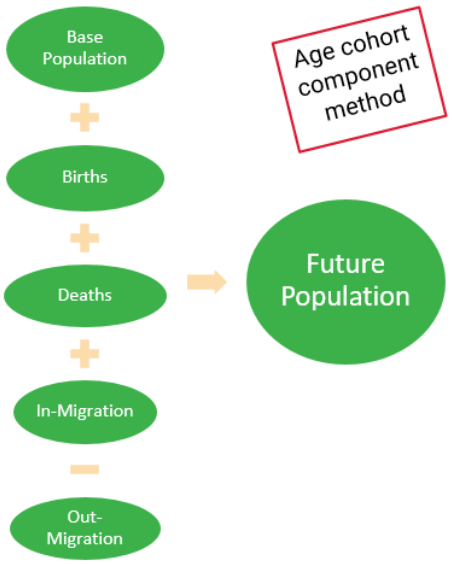
REMPLAN employs a combination of modelling methodologies, which are subject to different influences and all combine to generate informed Population, household and dwelling forecast for the region. The modelling process includes:

1) Cohort component model
2) Household propensity model
3) Housing unit model.

Cohort component model

The workhorse of population forecasting is the cohort component model. There are other options for respectable methods for forecasting population, but the cohort component model gives the best balance on approachability, intuition, forecasting accuracy and detail.

The cohort component model is combined with housing and household data (households/families and dwellings) to determine the potential growth that can be facilitated by residential development identified at the local level.



- Each year the population ages by one year and these are inputted into the base modelling ('ageing in place').
- The only way the population in an area can grow is by people migrating in or having children.
- The only way a population can decline in an area is by people migrating out, or people dying.

Put simply, the age cohort model is yesterday's population plus births less death plus net migration equals today's population.

When modelling each small area, REMPLAN undertakes forecasts of births by gender, deaths by age and gender, emigration by age and gender, immigration by age and gender, regional migration in and out by age and gender.

The modelling of the underlying drivers of population are undertaken in a dynamical modelling framework that produces detailed age and gender for each planning area.

Population change is combined with understanding the household formations that are specific to that geography i.e., lone persons households, couples only, families etc and this is then overlaid with identified future land supply in the region (infill development, rural residential, urban residential) and the timing of this supply of when it can be bought to the market to accommodate any future population.

Population base and trend data

The population base considers:

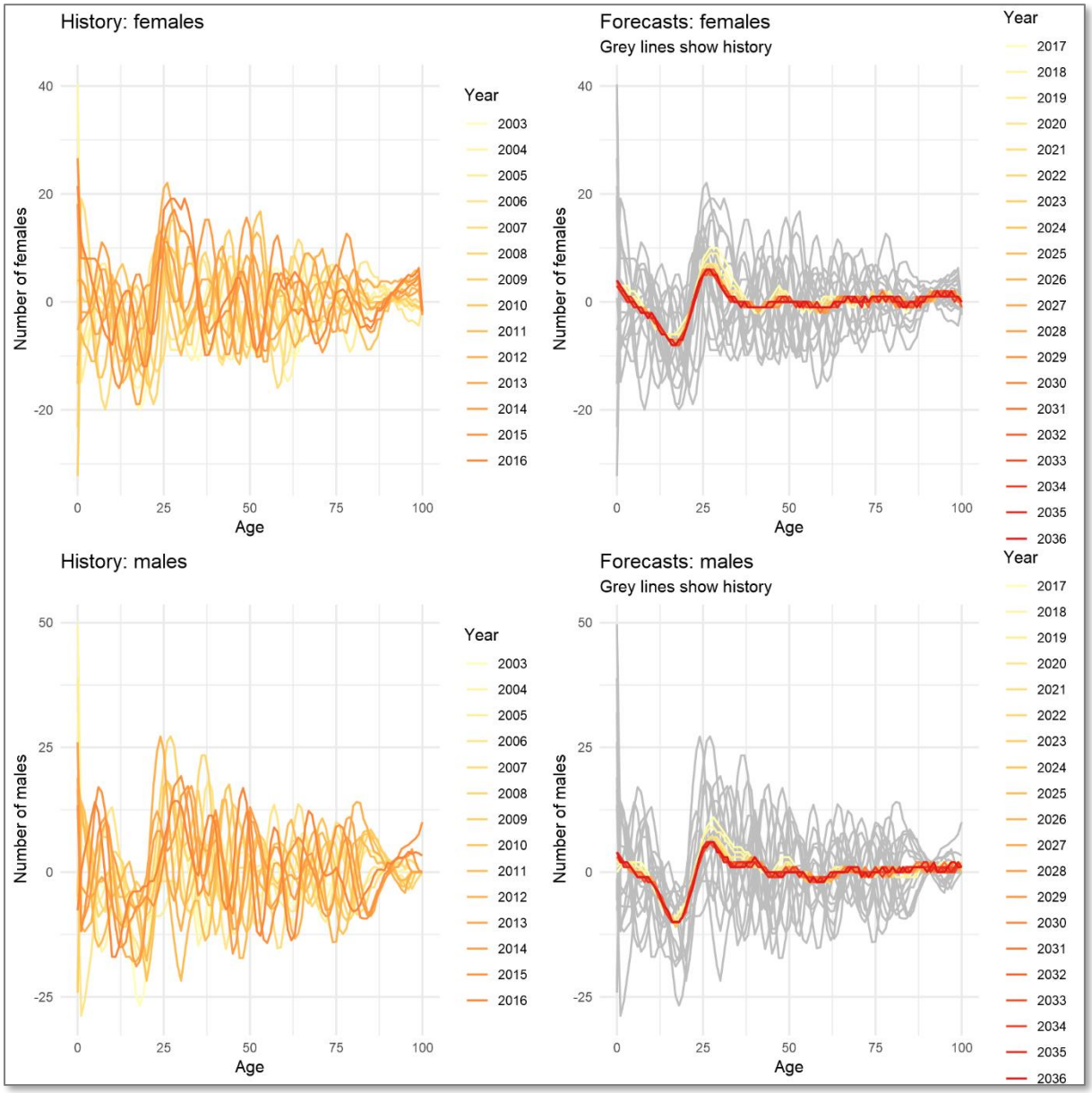
- 2016 Census population – Place of usual residence
- Trend Estimated Resident Population (ERP) figures with extended history from 2002 to latest year of release
- Official State Government Population forecasts (for benchmarking purposes)
- Demographic trend data in REMPLAN Community (which includes Census years 1991 to 2016).
- Census migration data: this provides an understanding of residents leaving the area as well as moving to the region between the 2006 and 2016 census periods – by single year age cohort
- Trend data for birth rates, fertility rates, death rates, migration, overseas arrivals and departures and building approvals.

This data is essential to understand the demographic drivers of change for input to the population modelling.

Net migration

Net migration is just one component of the cohort component population model, however for a lot of regions, it is the component that drives the majority of the change in the overall population.

At REMPLAN, we don't forecast net migration instead, we forecast gross migration movements. Immigration (from overseas), emigration (to overseas), regional in migration (from other regions of Australia) and regional out migration (to other regions of Australia). Plus we then forecast all of these models separately by gender. The next four charts show the history and the forecasts of the female and male net migration.

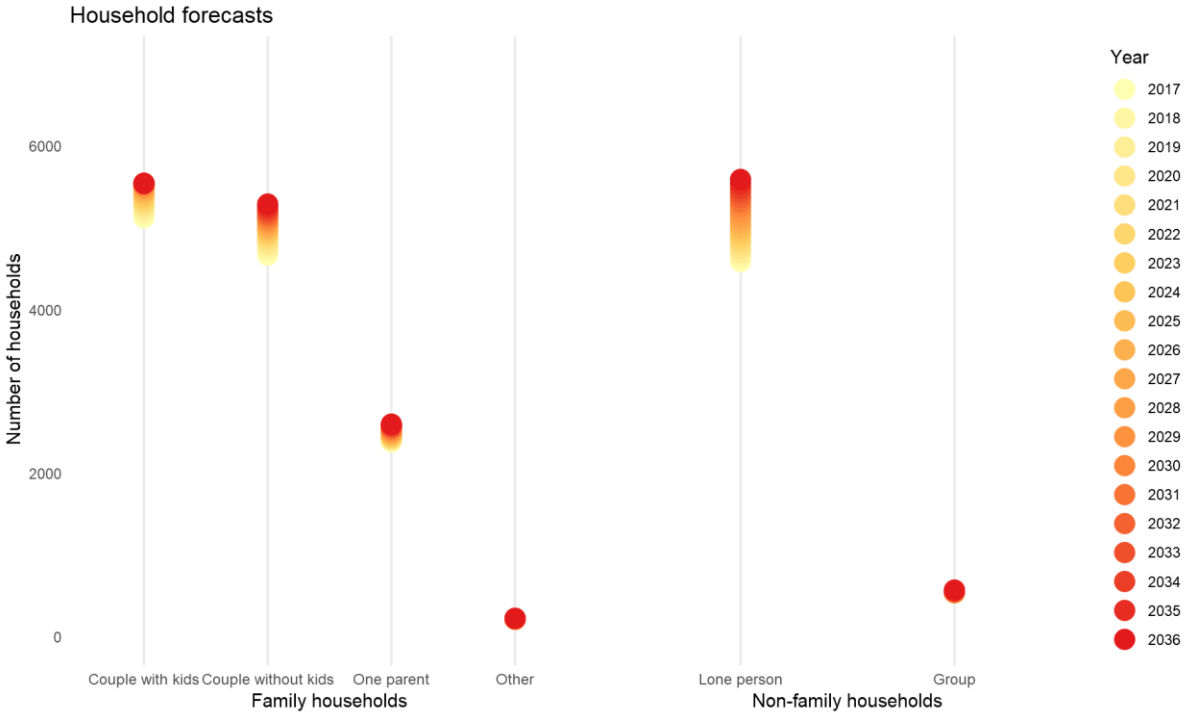

History: females
Number of females
Age
Year
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
Forecasts: females
Grey lines show history
Number of females
Age
Year
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
History: males
Number of males
Age
Year
Forecasts: males
Grey lines show history
Number of males
Age
Year

Household Propensity model

The Household Propensity model considers the relationship between people and housing in terms of household composition and formation, e.g. lone person households, family households. The following chart provides an example of the forecasts of the number of households by different household type.

The chart plots the number of households on the vertical axis and the different household types on the horizontal axis. Each year is represented by one point. The colour spectrum from yellow to red corresponds to the earliest year (yellow) to the last year (red).

Population change is combined with understanding the household formations that are specific to that geography i.e., lone persons households, couples only, families etc and this is then overlaid with identified future land supply in the region (infill development, rural residential, urban residential) and the timing of this supply of when it can be bought to the market to accommodate any future population.



Housing Unit model

The housing unit method calculates total population as the number of private housing units multiplied by the proportion which are occupied on a usual residence basis multiplied by the average number of persons per housing unit, plus the population in non-private dwellings. When small areas are considered, housing demand drives demographic change, whereas at the macro level demographics drive housing.

The housing unit model determines the number of occupied and non-occupied dwellings and private and non-private households. Non-private accommodation includes Hotel, motels B&B's, Nurse / staff quarters, boarding house, boarding school, hospital, nursing / aged care, corrective institutions etc.

Population change including net migration trends by age (informed by the cohort component model) is a key driver of housing demand. For example, younger cohorts (19-25) will have different demands to families; the ageing population may be downsizing or requiring some form of formal aged care accommodation.

Appendix B – Township residential land supply

The following tables provide land supply calculations for each township within Mount Alexander. These counts do not include rural supply which is part of the analysis for the forecast areas.

In addition to the zoned land, figures for currently unzoned greenfield land in Harcourt are also provided. These areas are identified as Area A and Area B which account for land covered by the proposed DPO12.The areas referred to are illustrated in Figure App - 1 Harcourt unzoned Greenfield areas. These figures have not been incorporated in supply figures used in the analysis and are provided for information only. Calculation of supply in greenfield areas are consistent with approach for other land with the exception that all land is considered available regardless of whether a dwelling is present on a parcel. A lot size of 850 sqm have been applied in subdivision yield calculations for land in unzoned greenfield areas.

Figure App - 1 Harcourt unzoned Greenfield areas

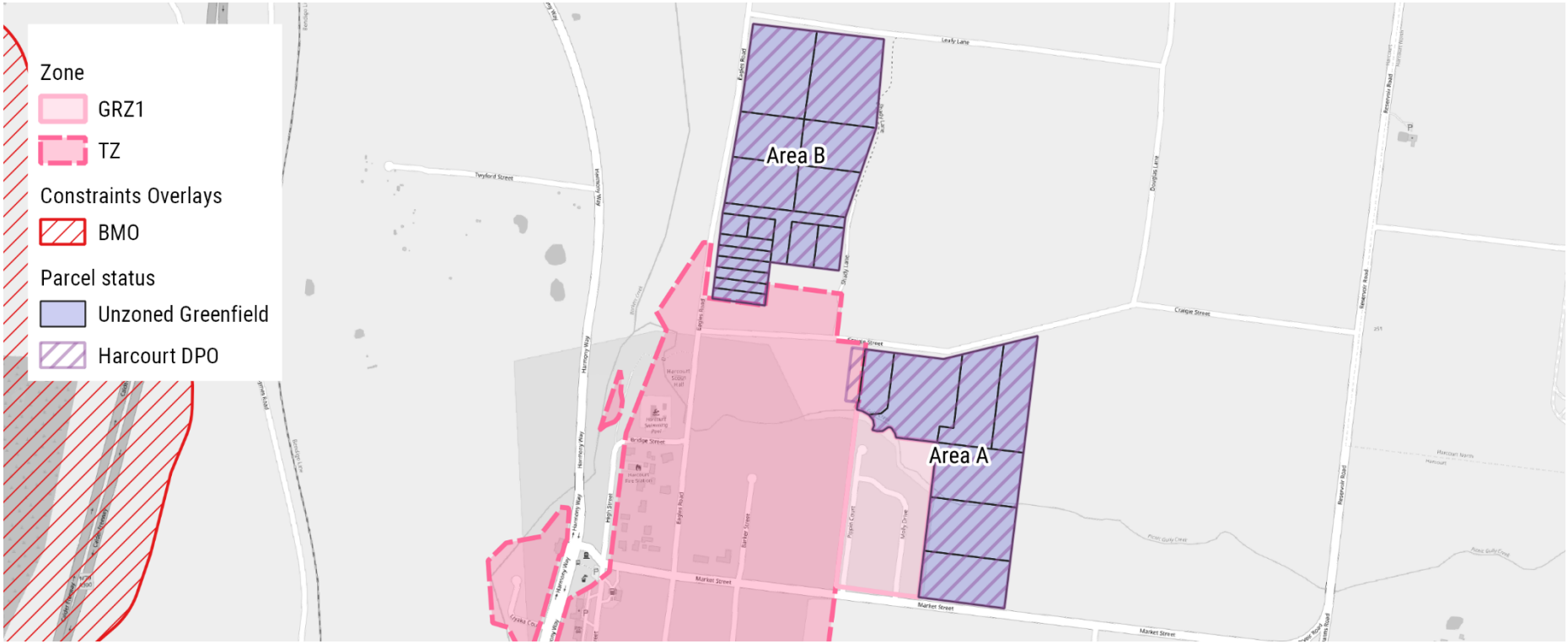


Table App - 1 Township's residential land supply (GRZ, TZ, LDRZ)

Township	Retail	Greenfield zoned	Greenfield unzoned A	Greenfield unzoned B	Total zoned	Total unzoned	TOTAL
Baringhup	0	0	0	0	0	0	0
Campbells Creek	538	322	0	0	860	0	860
Castlemaine	1,156	17	0	0	1,174	0	1,174
Chewton	289	118	0	0	406	0	406
Elphinstone	29	0	0	0	29	0	29
Fryerstown	36	0	0	0	36	0	36
Guildford	66	0	0	0	66	0	66
Harcourt	166	149	94	100	315	194	509
Maldon	309	33	0	0	342	0	342
Metcalfe	46	0	0	0	46	0	46
Newstead	233	73	0	0	306	0	306
Sutton Grange	28	0	0	0	28	0	28
Taradale	58	0	0	0	58	0	58
Vaughan Springs	13	0	0	0	13	0	13
Yapeen	27	0	0	0	27	0	27
TOTAL	**2,994**	**712**	**94**	**100**	**3,706**	**194**	**3,900**

Table App - 2 Township's residential land supply (GRZ, TZ)

Township	Retail	Greenfield zoned	Greenfield unzoned A	Greenfield unzoned B	Total zoned	Total unzoned	TOTAL
Baringhup	0	0	0	0	0	0	0
Campbells Creek	538	322	0	0	860	0	860
Castlemaine	1,141	17	0	0	1,158	0	1,158
Chewton	289	118	0	0	407	0	407
Elphinstone	29	0	0	0	29	0	29
Fryerstown	36	0	0	0	36	0	36
Guildford	66	0	0	0	66	0	66
Harcourt	166	149	94	100	315	194	509
Maldon	262	33	0	0	295	0	295
Metcalfe	46	0	0	0	46	0	46
Newstead	233	73	0	0	306	0	306
Sutton Grange	28	0	0	0	28	0	28
Taradale	58	0	0	0	58	0	58
Vaughan Springs	13	0	0	0	13	0	13
Yapeen	27	0	0	0	27	0	27
TOTAL	**2,932**	**712**	**94**	**100**	**3,644**	**194**	**3,838**