

Attachment - Item 10.2.10(c)

Moorabool Industrial Areas Strategy

Final report

Shire of Moorabool
May 2015



Independent insight.



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EXECUTIVE SUMMARY

Context

SGS Economics and Planning (SGS) were engaged by the Shire of Moorabool to review and forecast the supply and demand of industrial land and based on these findings formulate the strategic direction for industrial precincts in the municipality. The work is cognisant of broader issues such as population growth, economic structure and zoning controls across the Shire.

The Shire of Moorabool is a peri-urban municipality of Victoria which has historically developed with two economic focal points: Bacchus Marsh and Ballan. The former in particular, is likely to experience significant development and population growth over the next 40 years. Such large scale change requires careful long term planning for industrial land to ensure that the local economy develops and provides some employment opportunities for a rapidly expanding residential workforce.

In undertaking the assignment, SGS has performed detailed analysis of demand and supply, including land audits, business surveys and macroeconomic trend forecasts. The analysis was then used to inform a strategy for dealing with industrial lands in Moorabool up to 2051.

Summary of Supply & Demand Analysis

It is assessed that demand for industrial land in the Shire of Moorabool is expected to grow over time for manufacturing, logistics and service industries. In total, demand for industrial zoned land is expected to increase from 141 hectares today to 193 hectares by 2051.

| | Demand (ha) | 20% Vacancy Allowance (ha) | Total required industrial land (ha) | Supply (ha) ^a |
|------|-------------|----------------------------|-------------------------------------|--------------------------|
| 2011 | 117.7 | 23.5 | 141.2 | 346.0 |
| 2031 | 136.8 | 27.4 | 164.1 | 346.0 |
| 2051 | 161.0 | 32.2 | 193.1 | 346.0 |

The Shire currently possesses 346 hectares of industrial zoned land supply. Five industrial zoned precincts in Ballan, Maddingley and Parwan were identified and assessed in detail. Overall it was found that whilst the precincts in Ballan and Maddingley possessed significant levels of industrial development these precincts are impacted by residential encroachment. This issue significantly reduces the long term viability of these precincts to perform the heavy industrial role that their Industrial 2 Zoning would otherwise suggest.

In order to reach its economic potential and attract significant levels of new industrial investment, the Shire of Moorabool must therefore identify alternative locations capable of accommodating heavy industry.

The Parwan region was identified as the best location. Although it requires the delivery of necessary support infrastructure such as gas, water and improved road access to the Western Freeway (and

^a Includes both vacant sites and agricultural sites under industrial zoned lands.

possibly other incentives), it does possess some important natural advantages including proximity to Melbourne and an absence of residential encroachment.

Recommendations

Ultimately this report recommends that the Shire of Moorabool's major long term priorities should include:

- ☐☐ Further **investigation of options** for the transitioning of industrial precincts in Bacchus Marsh which are constrained by residential encroachment. This would predominantly assess alternative zoning and land use options, but also include consideration of traffic and amenity issues.
- ☐☐ Find, service and market a new industrial precinct which can:
 - ☐☐ Provide large buffer zones that attract manufacturing businesses
 - ☐☐ Provide large lots at relatively affordable land prices and rents
 - ☐☐ Potentially be well connected to Melbourne, which requires (a) a relatively Eastern location in the Shire and (b) potential for easy access to the Western Freeway pending investment in transport infrastructure
 - ☐☐ Potentially be well serviced by other types of infrastructure and utilities
 - ☐☐ Possess strong access to a sufficiently large and skilled labour force
- ☐☐ Develop an employment cluster at Parwan which includes a range of activities for industrial and agribusiness. This would address the second recommendation.
- ☐☐ Undertake a **Parwan Employment Cluster Governance Model** defining the overarching governance mechanisms, funding responsibilities, revenue generating capacity, liaison with State agencies and anchor tenants/investors for implementation.
- ☐☐ Undertake a **Parwan Precinct Structure Plan** which outlines specific zones, overlays and planning scheme policy supporting an Employment Cluster Strategy. This will need to address a broad range of detailed land use issues including co-location, subdivisions and amenity.
- ☐☐ Undertake a **Parwan Infrastructure Prioritisation Strategy** which presents a case for the staged provision of infrastructure, outlining the benefits and costs of providing different types of infrastructure across various parts of the precinct. A key feature of this strategy will be to provide a rationale for sequentially introducing new infrastructure over the short, medium and long term.



INTRODUCTION



Project context

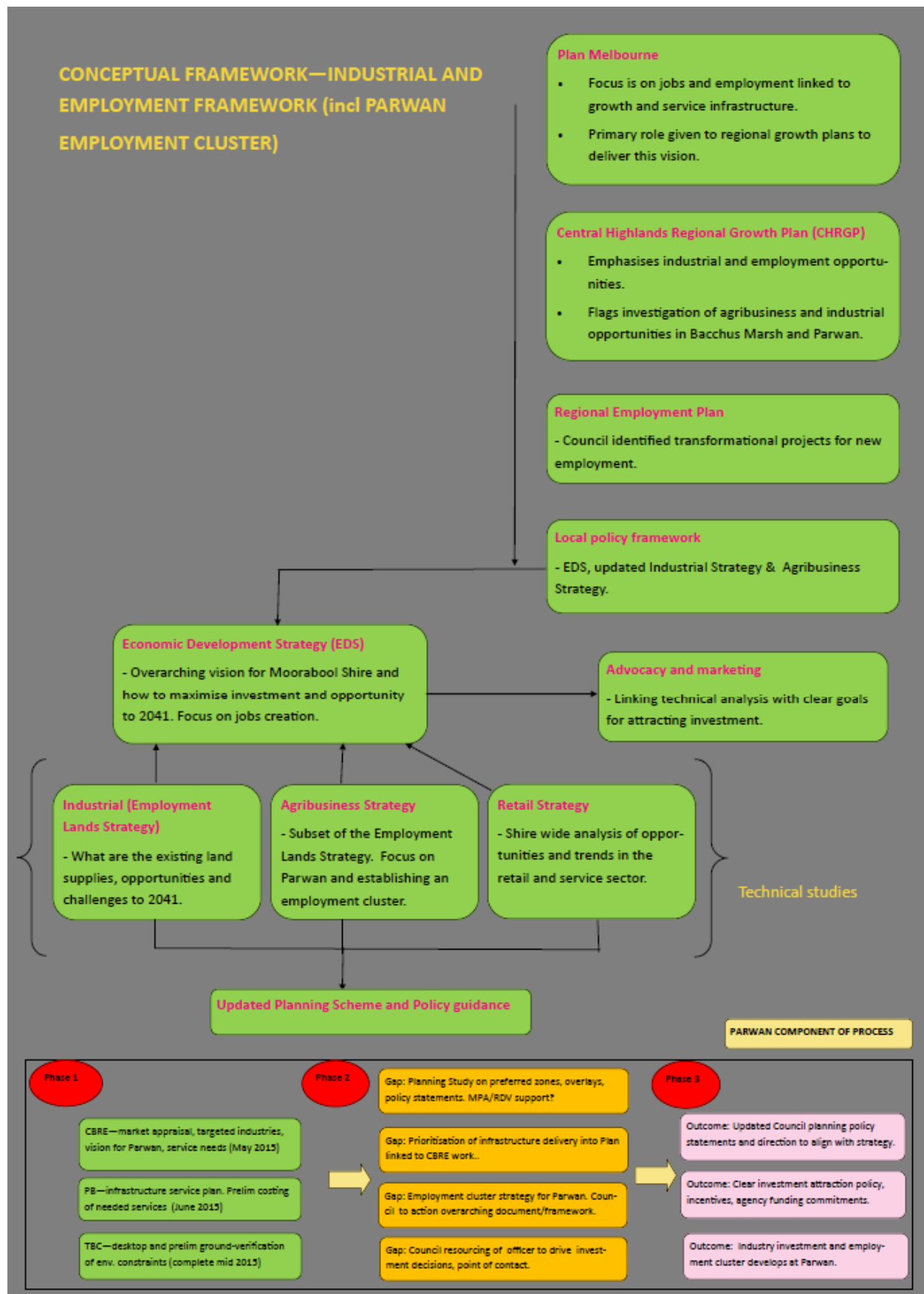
The Shire of Moorabool is one of the fastest growing municipalities in its region and is anticipated to experience significant growth in the future with regard to both population and employment. Council is currently undertaking a range of strategic studies (including an Economic Development Strategy, Agribusiness Areas Strategy and a Retail/Activity Centres Strategy) to better understand and plan for this future growth (see Figure 1 overleaf)

In this context SGS Economics and Planning (SGS) were engaged by Council to complete the **Moorabool Industrial Areas Strategy**. The strategy provides both a high level *as well as* a detailed strategic assessment of industrial land within Moorabool with a specific focus on industrial uses across the key employment precincts.

This report explores the future evolution of employment precincts in the municipality, with a particular focus on the supply and demand equation of key sectors of the local economy. Building on SGS's economic forecasts and business surveys, this report gives recommendations to council for how key industrial activities ought to be treated somewhat differently. The report concludes with strategic directions for how each of these activities should be managed, with precinct specific discussion for the allocation of land supply.

The SGS analysis of industrial zones and associated development issues is primarily focused on the existing partially or fully developed estates in the IN1Z and IN2Z designated areas. A brief review of the suitability of the IN1Z zoned site at Parwan is provided in this report. However, the future of that site and employment generating activity within the wider district is captured in other ongoing strategic analysis specific to Parwan. The recommendations contained in the CBRE work, as a significant component of employment analysis potential in Parwan, are captured in the Final Recommendations of the Industrial Areas Strategy.

FIGURE 1 OVERARCHING PROJECT INTEGRATION



Report purpose

This report's primary objective is to review and update the *Moorabool Industrial Areas Strategy 2001*. The core focus of the report then, is to provide a technical and factual assessment of industrial activity in the Shire.

The technical insights and subsequent strategic directions in this report should be drawn upon by Council as it advocates for employment opportunities for the Shire's residents and may also support future Planning Scheme Amendments.

Report structure

The remainder of this report is structured as follows:

Section 2 provides a summary of the local, regional and policy context within which the industrial lands in Moorabool will develop.

Section 3 summarises an in depth analysis of industrial land supply, including physical land audits, business surveys and landowner surveys.

Section 4 explores the future prospects of key sectors of the Shire of Moorabool's local economy, including workforce, employment and productivity.

Section 5 is an infrastructure assessment which explores the key strengths and shortcomings in the supply of five key infrastructure services important to Moorabool's industrial zoned precincts.

Section 6 is a detailed look at the industrial zoned precincts, including key activities and suitability analysis for accommodating future industries.

Section 7 synthesises the analyses of Sections 2 to 6 and provides an in depth guide of the three main types of industrial businesses likely to occupy industrial land and how Council can best satisfy their individual land use needs.

Section 8 then concludes with recommendations, actions and next steps for Council.



STRATEGIC CONTEXT

This section provides a summary of policies, strategies and plans relevant to industrial lands across the Shire of Moorabool. This framework was taken into account before analysis and policy recommendations were made.



State & regional policy

State Planning Policy Framework (SPPF)

The State Planning Policy Framework supports the economic well-being of communities and the wider state through the facilitation of economic growth and development. Land use and development is to meet the needs of communities and provide net community benefit, particularly with regards to accessibility and efficient use of infrastructure. The aggregation of commercial facilities is also recommended, and as such, out of centre development is discouraged. The continued availability of land for industry, where appropriate, is also identified as an area of focus for planning.

Bacchus Marsh is recognised by the SPPF as a regional centre and a key service centre for Victoria's Central Highlands region. Ongoing sustainable development is recommended for Bacchus Marsh as per its framework plan, with the provision of adequate land and infrastructure to assist in supporting the population growth that is anticipated in the Central Highlands.

Plan Melbourne refers to the role of employment to create sustainable communities – particularly in Western Melbourne, where housing development and urban growth has lagged behind development in Eastern Melbourne. As a result there is a heavy emphasis on rectifying this imbalance in metropolitan spatial growth patterns by developing infrastructure such as East-West Link (road-freeway tunnel) and Melbourne Metro (rail tunnel) to increase accessibility for both residents and businesses in the West.

Specifically, Clause 11.02-1 (Supply of urban land) strategizes for the 'ongoing provision of land and supporting infrastructure to support sustainable urban development'. This essentially requires planning authorities to allocate sufficient residential and employment land for a minimum 15 year horizon.

Clause 17.02-1 (Industrial land development) states the importance of industrial land in growth areas as a vital source of local employment. However the clause does also note that appropriate buffer zones need to be in place where there is an interface with sensitive land uses. The importance of large sites is also discussed, along with the need to avoid approval for non-industrial uses on industrial land.

This last point requires some further thought from an economic development perspective however, as some industrial businesses are increasingly reliant on their marketing and sales team(s) as a major point of difference. The cost saving from not requiring an additional retail frontage on a separate site is also important. Hence non-industrial activities with have a strong relationship to industrial businesses should still be approved in many cases.

Finally Clause 17 contains an important link to the report titled *Recommended Buffer Distances for Industrial Residual Air Emissions* (Environmental Protection Authority 1990) – which 'must' be considered as relevant. This report has since been replaced by the *Recommended Separation Distances for Industrial Residual Air Emissions – Guideline* (Environmental Protection Authority 2013). Table 1¹⁰ of this report provides guidance on recommended separation distances for industrial residual air emissions.

¹⁰ This important report can be found at: <http://www.epa.vic.gov.au/~media/Publications/1518.pdf>

These recommendations are the EPA's default minimum buffer distances in the absence of a detailed site specific assessment of proposed industrial/sensitive land uses. Note that these buffers only apply to manufacturing activities. Service industry and freight & logistics may still operate in close proximity to more sensitive uses provided that other factors (e.g. traffic) are considered. The table below summarises industrial (manufacturing buffers as outlined in the EPA's latest report:

FIGURE 2 BUFFER DISTANCE – GENERAL DISTANCES

| Industry type | Separation distance (metres) |
|---|----------------------------------|
| Basic metal products | 100 to 2,000 |
| Chemical, petroleum and coal products | 100 to 2,000 |
| Food and beverages | 100 to 1,000 |
| Non-metallic mineral products | 100 to 1,000 |
| Paper and paper products | 100 to 5,000 |
| Storage and transport of petroleum [Ⓐ] | 100 to 250 |
| Textiles | 250 to 1,000 |
| Waste management | Case by case detailed assessment |
| Wood, wood products & furniture | 100 to 250 |
| Miscellaneous [Ⓐ] | 250 to 500 |

In summary[Ⓐ]:

- All manufacturing activities must be located a minimum of 100 metres away from the nearest sensitive uses
- 95% of all industrial activity requires less than a 1,000metre buffer zone. Only particular types of metal and chemical manufacturing require a larger buffer.
- 99.5% manufacturing can be permissible at two kilometres (2,000 metres) from the nearest sensitive use (there is only one type of manufacturing which requires in excess of 2,000 metres).
- At five kilometres (5,000 metres) from the nearest sensitive use, all forms of manufacturing become legally permissible

Given that most of Moorabool's Industrial Zoned lands are IN2Z (for heavy industry), their location near major townships (Bacchus Marsh and Ballan) would be of some concern.

The only activity which requires a buffer distance greater than 2,000metres is paper production involving sulphur based materials (requires 5,000metres). It is unlikely to be worthwhile extending a buffer zone by 3km for this one industry – unless there is evidence that this industry will move to Moorabool.

Central Highlands Regional Growth Plan

The Central Highlands Regional Growth Plan, which aims to manage change in the region over the next 30 years, encourages the provision of industrial land across Moorabool to adequately support population growth and make use of economic development opportunities. A need to strengthen the Moorabool's local employment base, particularly in Bacchus Marsh is also identified, such that the need

[Ⓐ] Also includes hydro-carbon products

[Ⓐ] Includes printing, fibreglass, leather, hides

[Ⓐ] Note that there is similar information in Clause 52.10 of the Moorabool Planning Scheme (General Provisions)

for residents to commute to Melbourne and Geelong is reduced. The Shire is currently investigating the opportunity for increased employment and agribusiness activity at the airport and Parwan areas, with the potential for Parwan to become the key employment hub of Bacchus Marsh. Employment growth is to be effected through the provision of sufficient industrial and business zoned land that is attractive to new investment.

The significance of Moorabool's land and soils from a rural and agricultural productivity perspective is also recognised in the Plan. The Bacchus Marsh Irrigation District is noted in particular as supporting highly intensive horticulture on the edge of a large growing settlement. As Moorabool has extensive areas of land zoned for rural residential development, it is likely that these areas will face increased pressure for residential use. Moorabool is also attractive to buyers from neighbouring municipalities as it can provide more value for money and a different lifestyle to that offered in the larger surrounding cities. Where pressure for residential development in rural areas threatens to compromise agricultural activity or the availability of productive agricultural land, land use planning measures are to be used to prevent unsuitable encroachment. Goods exports, farming communities and resilience to changing conditions, whether climatic or economic, are also to be supported.

Earth resources that are important to the development of Melbourne are also to be protected. There are significant sand and stone resources in close proximity to Bacchus Marsh, which can be used in the production of concrete, clay for brick-making, and gravel. Manufacturing is a leading economic sector across the region, along with healthcare, finance, education and construction. With the continuance of population growth, however, the region's service sector is growing.

The Growth Plan recognises Bacchus Marsh as a key destination for population growth in the region and identifies the need for suitable provision of facilities, services, housing and employment to manage this growth. As a regional centre, Bacchus Marsh is to have large and diverse retail facilities and employment. It is noted as important that Bacchus Marsh have a well-defined commercial and industrial precinct.

As a town, Ballan is to have a moderate employment base and good access to services, as well as an important sub-regional goods and services role.

Local policy

Local Planning Policy Framework (LPPF)

The Local Planning Policy Framework covers a number of areas that play a role in the Shire's economy and industrial areas. The Shire's agricultural and horticultural industry is recognised as an integral component of Moorabool's economic base. As such, the protection and promotion of these industries are identified as imperative to land use planning. With residential growth threatening fragmentation of agricultural areas, residential development is largely to be directed to strategic growth areas. Furthermore, developments proposed for agricultural areas will be required to demonstrate that they will not be detrimental to existing agricultural activities.

The need to provide for a range of industrial development and activities with adequate access to infrastructure and services is also recognised in the LPPF. Despite the existence of large tracts of industrial land stocks within the Shire, much of this land remains undeveloped due to a lack of hard infrastructure to support activity. In order to create local development and employment opportunities, the LPPF requires the sustainable provision of industrial land in accordance with the Moorabool Industrial Areas Strategy, as summarised below.

As recognised in state policy, Bacchus Marsh plays a core role in the region's retail, service and employment activities. It is the Shire's main commercial centre, as well as the focal point for economic and residential growth, with Ballan and potentially Gordon acting as secondary centres. With notable trade leakage occurring as a result of the Shire's high commuter population, consolidation and

centralisation of Bacchus Marsh and Ballan is encouraged. This will include directing new commercial and retail development into the existing Bacchus Marsh retail area, as outlined in the Urban Design Framework for the centre.

Council Urban Growth Policy Statement

Moorabool's Urban Growth Policy Statement supports employment growth in particular areas of Bacchus Marsh. This is to ensure sufficient employment opportunities for local residents are available, whilst minimising the extent of escape expenditure (retail).

The emphasis here is on fully serviced industrial land. The significance of this requirement should not be overlooked as it is often costly to provide fully serviced industrial land. This servicing is therefore a long term matter.

Industrial lands that are provided with the right level of services must therefore be viable for attracting industry in the long term. That suggests the land must not only possess good access to transport connections, but also are relatively isolated from sensitive uses – residential development in particular.

Whilst this is a relatively straightforward issue in principle, the reality is that infrastructure facilities are usually not provided beyond the urban footprint of most townships. So it is common for industrial land to possess *either* fully serviced infrastructure or large buffers from sensitive uses – but not both.

'Growing Moorabool' Economic Development Strategy and Action Plan

'Growing Moorabool' was developed in 2006 to identify new investment opportunities and employment growth in targeted areas across the Shire. A secondary goal was to reduce the level of retail expenditure that Moorabool commercial activity centres were losing to other competing centres. With a large proportion of Moorabool's labour force working outside of the Shire, potential local spending on goods and services were found to often occur elsewhere. It was recommended that significant and accelerated population growth be facilitated within the Shire in order to encourage business and retail development. Moorabool's vital agricultural industry was also to be further promoted with the implementation of value-adding strategies.

With regards to industry, it was recommended that the Shire's significant stocks of industrial land be better utilised. With a targeted increase of 145 jobs per year from 2001 to 2021, it was suggested that an approximate 30-60 ha of the region's approximate 375 ha of industrial land would be required for industrial growth. It was found, however, that use of industrial land in Moorabool was negatively impacted by strong competition from the western suburbs of Melbourne, though it was anticipated that demand would increase with the population growth and business investment that was forecasted across the Shire. The need to increase service and infrastructure (including adequate communications infrastructure) and amenity in industrial areas was also identified, and it was suggested that niche development such as transport, storage and logistics could also be pursued. Manufacturing was identified as a strong job-providing sector, employing 15% of the total of employed people in the Shire, as well as having potential to play a key role in developing an export-based economy for the Shire. Despite this, it was found that this sector was underdeveloped and relatively unsophisticated. Some existing local enterprises were exemplified, however, as models for future industrial development.

It was suggested that while major industrial development in Moorabool would only occur with population growth and development of the population-driven business sector, actions could be taken to drive and improve conditions for new industry. The following strategies were developed to facilitate greater industrial development for the region:

3.4.3A Using Council's existing industrial land holdings as equity, call for expressions of interest from major industrial land developers for the repackaging and remarketing of these assets as part of a joint venture.

3.4.3B Carry out a complete audit of all industrial land in the Shire to identify land that is inappropriate for industrial purposes and rezone it for more appropriate uses.

3.4.3C Prepare a series of case studies of leading advanced local manufacturers in Moorabool to assist with promoting the municipality to help bring together business clusters.

3.4.3D In partnership with DIIRD [Department of Innovation, Industry and Regional Development], explore directing some of Moorabool's more advanced manufacturers into programs designed to encourage innovation, research and development and export (IRDE programs).

It was noted, however, that despite goals to develop industry in the Shire, these should not be fulfilled at the expense of the amenity of existing environments, or hinder the establishment of improved environments to attract new residents.

The Economic Development Strategy is currently being updated and this report is informing that update.

Moorabool Industrial Areas Strategy (MIAS)

The Moorabool Industrial Areas Strategy was developed in 2001 by recommendation of the Panel and Advisory Committee involved in the development of the new Moorabool Planning Scheme in 1999. The goal of the MIAS was to assess the issues and opportunities for industry in the Shire, particularly in Bacchus Marsh and Ballan. Analysis of trends in industrial development were conducted at various scales, from state to local, along with supply and demand assessments and a review of existing industrial zoned areas.

In projections for opportunities for industrial land, it was found that the Shire would require approximately 25 ha of industrial zoned land in the base case scenario, whereby the existing job to industrial lot ratio would be maintained. In the scenario of highest growth, in which development of the local economy and the generation of further economic activity and employment was to be sought, a projection of 30 – 40 ha of industrial land was established.

Issues for industrial development

Moorabool was found to compete for industrial development with other regional centres. Analysis of the available pool of land from which potential users could choose found approximately 3,360 ha of vacant land zoned and suitable for industrial development was available in relative proximity to the Shire, in Western Melbourne, Geelong and Ballarat. With just over 200 ha of suitable land found, Moorabool represented only approximately 6% of the total pool, and it was thus concluded that there was no particular demand for industrial development in Moorabool relative to other areas, many of which possessed greater competitive advantages as an industrial destination.

In a focus group, inadequate heavy vehicle access to the industrial areas of Bacchus Marsh; land use conflicts caused by the encroachment of residential development; and the lack of large subdivided and serviced lots and established industrial buildings were also raised as causes of concern.

Opportunities for growth

Opportunities for industrial growth were identified in the following areas: population/service driven development or 'consumption led growth'; and resource driven development (export led growth). It was forecasted that in the medium to long term, Moorabool's industrial land would continue to attract population driven industrial development at rates similar to 5 years previously. With population increase and growth along the Melton corridor it was anticipated that Moorabool would become more attractive for such development over time. The composition of population driven industries was expected to

remain unchanged, and was expected to predominantly comprise small to micro businesses. These were identified as follows:

- Service industries (panel beaters, cabinet makers, trade supplies etc.)
- Transport and storage
- Construction businesses
- Light fabrication
- Small scale food processing
- Services to the mining industry
- Machinery and equipment manufacturing (of which there already exists a small cluster of firms engaged in this activity); and
- Building, furniture and other manufacturing.

With regards to resource led development, the Shire's key industrial and economic development opportunities were found to lie in the extraction and downstream processing of its resources. Areas of relevance included: agriculture; clays, minerals and sand; transport and distribution; and brown coal. Land at the former CSR and the Maddingley coal site were identified as areas that were capable of hosting future downstream processing of coal resources.

Key recommendations

The Strategy's key recommendations for long-term industrial development were:

- The designation of the Bacchus Marsh – Geelong Road industrial site as an area to complement existing industrial areas. Land in the vicinity of the Parwan – Exford Road intersection was recommended for reasons of accessibility, proximity to the town centre, and lack of surrounding residential development. This area was also seen to provide larger allotments which are required for certain industries.
- Priority development of a Development Plan for the Maddingley Brown Coal Special Use Zone.
- The rezoning of the Ballan Industrial Estate from Industrial 2 to Industrial 1 and the preparation of a Development Plan for the area. Council-driven revitalisation processes for the estate were also recommended.
- Further rezoning of land from Industrial 2 to Industrial 1 (Station Street Industrial Area, Hillside Industrial Area and the Rutherford Court Industrial Estate).
- Improvements to access to the Hillview Estate; and safety considerations at the Woolpack Road and Bacchus March Road intersection, as well as at the Fiskens Street and Main Street intersection. Upgrades to the Parwan area were also recommended, including Exford Road, Gillespies Lane and Woolpack Road.

Maddingley Brown Coal site

The Maddingley Brown Coal site has been a key point of contention within the Shire. The following summarises several documents that pertain to issues concerning this area.

Maddingley Brown Coal Mine Development Plan (1995)

In recognition of the resource potential of the mining zone of the Maddingley site and the change of ownership that occurred in September 1990, a Mine Development Plan was developed for adoption into the then Bacchus Marsh Planning Scheme. Its key concerns, as extracted from the Amendment L39 to the Bacchus Marsh Planning Scheme (1. iii), were to:

- *Take account of the proposed use and development of any adjoining or nearby lands which are affected by the buffer distances around the mine by the Environmental Protection Authority, as provided for in the South Maddingley Outline Development Plan,*

- *Implement the EPA buffer of 250 metres from the final face of the coal mine to the nearest land zoned for residential development at conventional urban densities (nominally 10 dwellings per hectare), and*
- *Allow for the continued use of land within the area covered by the Development Plan for the disposal of waste.*

Other information presented included the geology of the site, assessment of coal reserves, and mining and processing methods, as well as considerations for fire safety, dust and noise suppression, rehabilitation of land, and opportunities for ancillary mining activities.

Maddingley Brown Coal Resource Strategic Review (2006)

Undertaken by an Interdepartmental Working Group convened by the Department of Sustainability and Environment (DSE), this Review was developed to determine the strategic value of the Maddingley coal deposit and determine the level of protection required for the site's coal resource in the future, in light of concerns that the site's Special Use Zone (SUZ1) designation in the Moorabool Planning Scheme restricts the urban expansion of Bacchus Marsh.

The Moorabool Shire Council's 2005 submission to the Review outlines the Shire's concerns surrounding the Maddingley site. It contends that the coal resource is negligible within the state context, that demand for it is relatively low, and that the mine's landfill operation presents problems for the community and environmental management. Moreover, it asserts that the growth and development of Bacchus Marsh, a goal endorsed at the state level, is constrained by the Maddingley SUZ1, which covers a sizeable and strategically favourable area that could be used for the purposes of urban development. It is further argued that the provisions of the SUZ1 are flawed and are dependent on cooperation from Maddingley Brown Coal, and that landowners and residents in the area face unreasonable uncertainty about the future of the area. The degree of constraints on the site in using the resource is also cited. Specialist advice on the geology of the coal deposit and the economic benefits of its mining within the SUZ was also commissioned by the Shire in preparation of the submission. The report developed by GHD in 2005 recommended that changes be made to the SUZ1, and proposes a number of buffers zones for the area.

With consideration for submissions to the Review and in consultation with relevant stakeholders, the IWG concluded that the Maddingley coal resource is of strategic value, with potential for clean coal technology development and the creation of jobs in the region. It further found that significant areas of land to the north and west of the current SUZ1 have potential for future urban development.

Implications for Industrial Land Use Strategy

Industrial activity with a direct relationship to Mining activity should be encouraged to develop either on-site or in colocation with mining.

The analysis in this strategy finds that there is currently an adequate supply of industrial land in Moorabool. SGS research across Victoria has also found that presently, there is minimal locational relationship between mining activities and most regional/local industrial activities.

However in the long term, there may be some merit in co-location between mining and industry – particularly if any industrial land is ever decommissioned for other purposes. In particular, some mining precincts such as Myrniong, Darley-Coimadaí, Rowsley are reasonably well located in terms of connectivity to the Western Freeway and Melbourne.

Council should adopt a three-step sequential test policy in regards to the management of mining related industrial activity:

- ☐☐ In the first instance, such activity should be accommodated on the mining sites themselves

- ☐☐ If this is not possible/feasible, Council, business and landowners will investigate land *immediately adjacent* to those mining precincts for rezoning. Such rezoning needs to be staged in line with genuine prospects for mining related industry – although the zoning itself can precede relevant industrial land use proposals in order to remove uncertainty for investors.
- ☐☐ Failing the first two tests, more distant land is explored, at this point there needs to be consideration of whether there is sufficient, suitable land already zoned in other industrial precincts around Moorabool.

A cost benefit analysis can be applied to both the second and third tests to help arrive at a rational decision.

Bacchus Marsh Industry and Investment Opportunity Study – Aerodrome Precinct

The Bacchus Marsh Industry and Investment Opportunity Study was developed in 2009, with a focus on two precincts: the Bacchus Marsh Central Activity District and the Bacchus Marsh Aerodrome Precinct. This summary outlines the findings of the latter. While key opportunities for the Aerodrome precinct were found in its functional capabilities and active commercial and recreational use, issues such as limited space for additional commercial operations, limited provision of utilities, unsealed internal access roads and inefficient management structure were also identified.

In order to provide more direction and facilitate greater control over development within the Aerodrome, it was recommended that a Special Use Zone be established. Given the potential of Bacchus Marsh to provide large industrial allotments, it was also suggested that the Aerodrome and its facilities be improved so that the Bacchus Marsh airfield can provide new business and development opportunities. It was further recommended that development of the Aerodrome occur within the existing rural context of Bacchus Marsh, rather than shifting towards a Moorabbin or Essendon style airport. Plans to develop the Industrial 1 Zone area to the east of the Aerodrome is expected to provide significant economic benefit and employment opportunities.

Hillside Industrial Estate Outline Development Plan

The Hillside Industrial Estate Outline Development Plan (2003) found that, given the dilapidated appearance of the site, the area could benefit from ‘gateway’ developments on vacant or predominantly vacant land on Griffith Street, to the east of the estate, and on the corner of Cemetery Road and Griffith St, to the west of the estate. It was suggested that improvements to median strips within the estate could also improve the appearance of the area. The Plan also recommended the rezoning of interfaces with residential areas to Industrial 3 Zones, while converting the remaining areas of the estate to Industrial 1. It further recommended the facilitation of development of large, vacant lots (over 2,000 sq m) on the periphery of the estate, and ensuring the maintenance of design and development quality to increase the attractiveness of the site for potential future developments.

Note that this the report was authored, this development has occurred.

Urban Development Program

Whilst this report contains an independent assessment of industrial land and supply in Moorabool (Sections 3 and 4), there has also been consideration of the Urban Development Program’s (UDP) *Regional Industrial Report* for the Shire of Moorabool in 2012. This represents the Victorian State Government’s demand projections and land supply estimates.

In general, that report found there to be no identified shortfall of industrial land by any specific lot size. This accounts for two sensitivity tests applied for a 25% and a 50% increase in historical demand.

That report also identifies no monopolistic or infrastructure related issues to existing industrial subdivisions.

Implications

From this strategic review, it can be ascertained that planning for industrial and agricultural land remains a key aspect of overarching objectives in the Shire of Moorabool. While both face somewhat uncertain futures – particularly from the encroachment of residential uses – local planning policy aims to direct residential growth to designated areas of the Shire in order to maintain reasonable buffer zones. It is hoped that with increased population growth, industrial development in the Shire will continue, and increased access to underutilised industrial land stocks is to be facilitated accordingly.

As a significant area for economic activity and employment, Bacchus Marsh remains an area of local and regional importance, and was identified in the 2001 Moorabool Industrial Areas Strategy as a destination for future industrial growth. It is possible, however, that the Maddingley Brown Coal site may restrict the future urban expansion and development of Bacchus Marsh, though provisions to direct growth elsewhere in Bacchus Marsh have been made to mitigate this issue.



SUPPLY ANALYSIS

This section acts as a synthesis of a number of aspects of the industrial land study, including:

- *Regional industrial land use supply audit*
- *Local industrial land use supply audit*
- *Business surveys¹⁰*
- *Land owner surveys*

The results of the audits and surveys have been distilled into a comprehensive analysis of supply status and trends to inform the planning and policy recommendations later in this report.



Regional industrial land supply

The Shire of Moorabool is not the only municipality in its region possessing industrial land supply. As Figure 3 below demonstrates, four of the eight adjacent municipalities possess higher levels of industrial zoned land than Moorabool. Of these municipalities, the City of Greater Geelong and the City of Ballarat provide greatest competition for industrial activities which are linked to Western Victoria, whilst Wyndham and increasingly Melton, accommodate industrial businesses with strong links to the rest of Metropolitan Melbourne's economy.

Overall supply of employment land within the City of Melton is increasing relative to other municipalities in the region. Over the next 20 years Melbourne's urban development will continue to become more oriented towards its western frontier, and as a result, employment land in the City of Melton will also be in greater demand as it becomes more integrated with the rest of the metropolitan economy.

Moorabool's industrial lands will not possess the same levels of accessibility, and should therefore find alternative points of difference in its competition with Melton's industrial lands. Possible competitive advantages could include low costs of land, the large size of land parcels and larger buffer distances. These issues will also be discussed in greater detail later in the report.

¹⁰ Although consulted with, Agricultural businesses have largely been excluded from the survey results because (a) it is difficult to approach agricultural or mining business owners on site and (b) the nature of those economic operations are very different from other uses and would have significantly distorted survey results such as employment density given the nature of their landholdings.

FIGURE 3 REGIONAL INDUSTRIAL LAND SUPPLY (HA) – EXISTING ZONED LAND

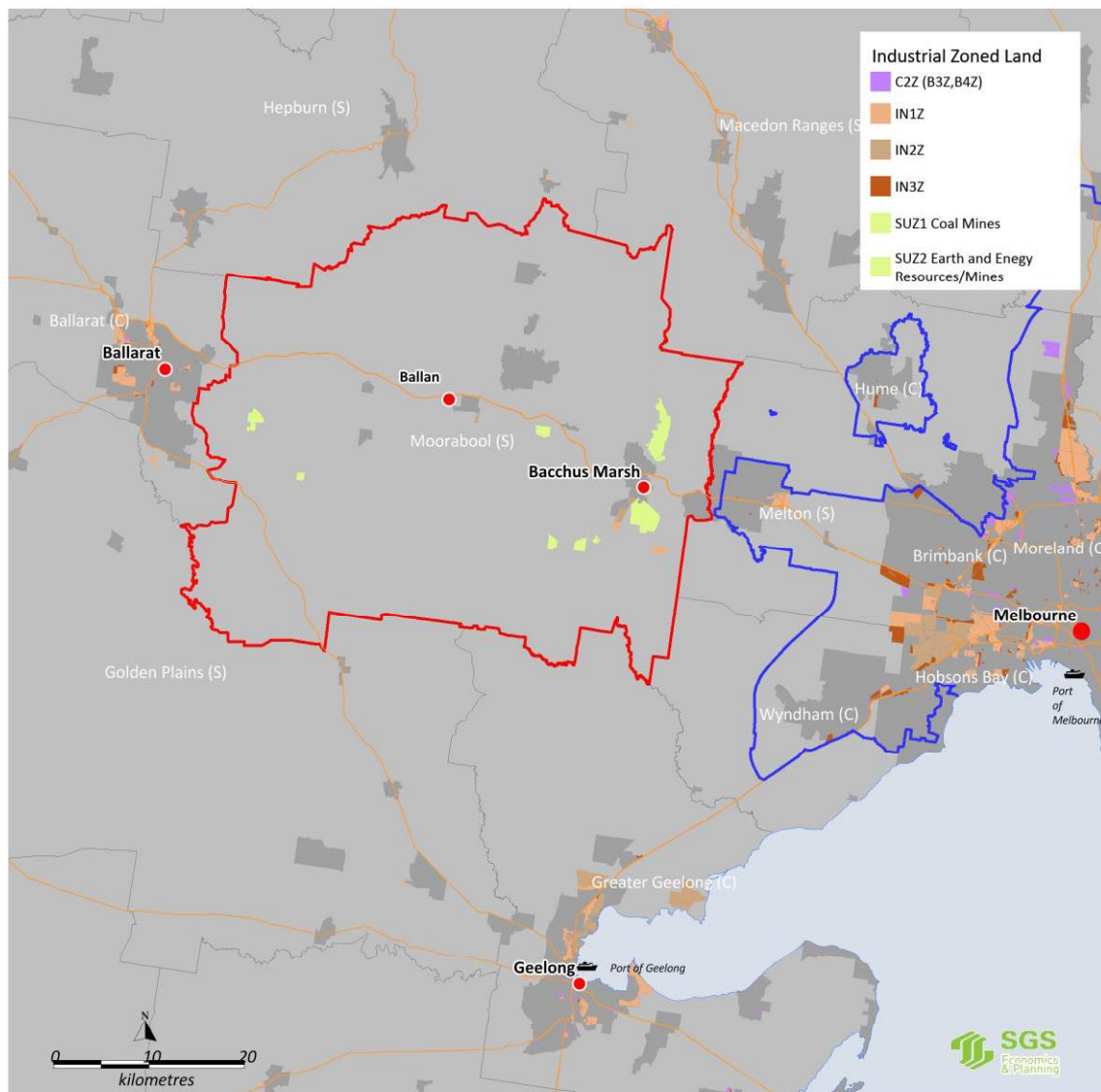
| | Moorabool | Melton | Greater Geelong | Ballarat | Wyndham | Golden Plains | Hepburn | Macedon Ranges | Metro. Melbourne |
|---------------------------------------|--------------|------------|-----------------|--------------|--------------|---------------|-----------|----------------|------------------|
| Commercial (C2Z) | 0 | 80 | 150 | 30 | 10 | 10 | 0 | 40 | 2,970 |
| Industrial (IN1Z, IN2Z, IN3Z) | 346 | 820 | 2,750 | 1,040 | 1,990 | 30 | 70 | 320 | 17,910 |
| Special use ² (SUZ1, SUZ2) | 2,262 | - | - | - | - | - | - | - | - |
| Total | 2,608 | 900 | 2,900 | 1,070 | 2,000 | 40 | 70 | 360 | 20,880 |

Source: SGS Analysis of Victorian Planning Provisions GIS Database

The Urban Development Program (UDP) for Metropolitan Melbourne reports the quantum of un-zoned Greenfield lands which are likely to be converted to Industrial Zoned Lands through the Precinct Structure Planning Process. The 2013 UDP Report states that there are 1,950 hectares of potential industrial land in Melton and 690 hectares in Wyndham.

² Applies to Moorabool only as special use zones are used for different purposes across various municipalities

FIGURE 4 REGIONAL MAP OF INDUSTRIAL ZONES WITHIN AND SURROUNDING THE SHIRE OF MOORABOOL, VICTORIA



Source: SGS Analysis of Victorian Planning Provisions GIS Database

Local industrial land supply

Method

A municipal-wide land use audit and surveys of business and land owners was undertaken to inform the industrial land supply analysis of the Shire of Moorabool. The land use audit was conducted to gain a comprehensive understanding of the status of industrial lands across the Shire. This audit was undertaken with the use of:

- GIS cadastre layers in Mapinfo for precinct and site analysis
- Google Earth and Nearmap 2014 imagery for building footprint analysis
- Site visits in July 2014 of all industrial and special use² zoned sites and precincts across the Municipality

² INZ1, INZ2, SUZ1 AND SUZ 2 only

The business and land owner surveys were undertaken to identify key employment trends and locational advantages and disadvantages to establish the strength and position of each precinct within the local and regional economy.

Follow-up consultation with individual business owners and key stakeholders were also conducted to compliment survey findings.

Land audit results

A stocktake of existing employment lands by zones in the Shire of Moorabool is shown below in Figure 5. Industrial 1 and Industrial 2 Zoned land provides for the core manufacturing, transport and warehouse operations in the economy. The Special Use Zoned lands accommodate extractive industries, with coal mining being the most significant of those activities. Mining operations are generally scattered across remote locations in the Shire.

FIGURE 5 EXISTING MOORABOOL INDUSTRIAL LAND BY ZONE

| Zone | Gross Land Area | | Net Lot Area [Ⓐ] | | Floorspace | | Employment (Jobs) | |
|------------------------|-----------------|-------------------------|---------------------------|----------|----------------|----------|-------------------|--------------------------|
| | Total (Ha) | % | Total (Ha) | % | Total (sqm) | % | # | % |
| Total INZ | 360.3 | 13.6% | 346.0 | 13.3% | 112,148 | 80.6% | 644 | 71.2% |
| Total SUZ | 2,285.9 | 86.4% | 2,261.6 | 86.7% | 26,910 | 19.4% | 260 | 28.8% |
| Total INZ + SUZ | 2,646.3 | 1.3%[Ⓑ] | 2,607.6 | - | 139,058 | - | 904 | 14.9%[Ⓒ] |
| Moorabool LGA | 210,952.0 | - | - | - | - | - | 6,082 | - |

Source: SGS Analysis of Victorian Planning Provisions GIS Database, SGS Land Audit & Surveys, ABS Census 2011

Figures 6 and 7 present the key results of the land use audit. All business activities have been further refined by the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06).

As expected of a rural shire, agricultural and mining uses are land intensive and collectively account for the majority of land audited in this study (even in Industrial Zoned lands). Key employing industrial land uses have been highlighted in brown. Those key employing industrial activities were the primary focus of the surveys – although other uses such as retail and cultural activities were also discovered. The audit found that at present, Manufacturing is a highly significant component of Moorabool's industrial lands both in terms of land area and employment.

The Agricultural and Mining activities in the Special Use Zones analysed in Figure 4 are expected to remain unchanged in the foreseeable future. Hence this study will primarily focus on the more dynamically changing activities in the Industrial Zoned Uses which are analysed in Figure 5.

Details of how the job numbers in Figures 5, 6 and 7 were derived are explained in Appendix A.

[Ⓐ] Net lot area represents gross land area minus non-site land uses such as local roads and parks

[Ⓑ] Proportion of Moorabool LGA's land.

[Ⓒ] Proportion of Moorabool LGA's jobs.

FIGURE 6 LAND USE IN SPECIAL USE ZONED (SUZ1, SUZ2) PRECINCTS

| Land Use Identified | 2017/18 | | 2018/19 | |
|---|----------------|---------------|---------------|------------|
| | Area (ha) | % | Area (ha) | Jobs |
| Total | 2,071.5 | 91.6% | 25,786 | 260 |
| Agriculture, forestry and fishing | 1,146.8 | 50.7% | 18,653 | 68 |
| Mining | 897.9 | 39.7% | 3,041 | 165 |
| Manufacturing | 18.3 | 0.8% | 494 | 8 |
| Retail trade | 1.4 | 0.1% | 1,257 | 6 |
| Transport, postal and warehousing | 0.0 | 0.0% | 0 | 0 |
| Other Services ²⁰ | 0.1 | 0.0% | 447 | 3 |
| Wholesale trade | 0.0 | 0.0% | 0 | 0 |
| Professional, scientific and technical services | 0.0 | 0.0% | 0 | 0 |
| Public Administration and Safety | 0.2 | 0.0% | 572 | 0 |
| Electricity, gas, water and waste services | 0.0 | 0.0% | 0 | 0 |
| Construction | 0.0 | 0.0% | 0 | 0 |
| Rental, hiring and real estate services | 0.0 | 0.0% | 0 | 0 |
| Arts and Recreation Services | 0.0 | 0.0% | 0 | 0 |
| Administrative and support services | 0.0 | 0.0% | 0 | 0 |
| Education and training | 0.0 | 0.0% | 0 | 0 |
| Accommodation and food services | 0.0 | 0.0% | 0 | 0 |
| Unidentified industrial | 5.8 | 0.3% | 1,321 | 10 |
| Unzoned | 2.4 | 0.1% | 634 | |
| Total | 188.6 | 8.3% | 490 | |
| Total | 2,261.6 | 100.0% | 26,910 | 260 |

Source: SGS land audit and business surveys

Figure 7 shows that presently, 14.8% of Industrial Zoned lands were found to be vacant. These statistics represent a 'snapshot' of business activity in the Shire at a given point in time. Note that in the long term however, Agricultural uses in Industrial Zoned lands should be considered as an underutilisation of that land, with Industrial uses such as Manufacturing likely to be the ultimate highest and best use. Hence agricultural lands should also be included as part of long term vacant supply. Hence the long term vacancy is closer to 65.5% (14.8% short term vacancy plus 50.7% agricultural or long term vacancy).

Economic activities in the economy are dynamic, and there is usually a period between when a business vacates a site and new business arrives to occupy the same lot. This frictional vacancy or churn is usually about 20% of all zoned lands in a regional area, and so the real existing vacancy of industrial lands in Moorabool should be closer to 45.5%.

²⁰ Mainly service industries such as auto repairs

FIGURE 7 LAND USE IN INDUSTRIAL ZONED (INZ1, INZ2) PRECINCTS

| Land Use Identified | Area (ha) | % of Net Lot Area | Jobs |
|---|--------------|-------------------|----------------|
| Net Lot Area¹⁷ | 293.3 | 84.7% | 105,303 |
| Agriculture, forestry and fishing | 175.5 | 50.7% | 1,431 |
| Mining | 0.0 | 0.0% | 0 |
| Manufacturing | 64.1 | 18.5% | 40,234 |
| Retail trade | 9.0 | 2.6% | 5,594 |
| Transport, postal and warehousing | 3.2 | 0.9% | 5,985 |
| Other Services¹⁸ | 8.3 | 2.4% | 16,770 |
| Wholesale trade | 7.7 | 2.2% | 3,745 |
| Professional, scientific and technical services | 7.5 | 2.2% | 3,068 |
| Public Administration and Safety | 5.9 | 1.7% | 1,627 |
| Electricity, gas, water and waste services | 1.5 | 0.4% | 761 |
| Construction | 0.6 | 0.2% | 3,123 |
| Rental, hiring and real estate services | 0.7 | 0.2% | 1,584 |
| Arts and Recreation Services | 0.4 | 0.1% | 2,328 |
| Administrative and support services | 0.3 | 0.1% | 994 |
| Education and training | 0.1 | 0.0% | 333 |
| Accommodation and food services | 0.0 | 0.0% | 0 |
| Unidentified industrial | 8.4 | 2.4% | 17,725 |
| Net Lot Area¹⁹ | 1.6 | 0.5% | 4,216 |
| Net Lot Area²⁰ | 51.2 | 14.8% | 2,629 |
| Net Lot Area²¹ | 346.0 | 100.0% | 112,148 |

Source: SGS land audit and business surveys

Figure 8 below summarises the supply equation in Moorabool's industrial zoned lands.

FIGURE 8 SUPPLY - INDUSTRIAL ZONED LAND (HA)

| | Land/Lot Area | % of Net Lot Area | % of Gross Land Area |
|-------------------------------------|---------------|-------------------|----------------------|
| Net Occupied Lot Area ²² | 117.7 | 34.0% | 32.7% |
| Vacant + Agricultural Lot Area | 226.7 | 65.5% | 62.9% |
| Net Lot Area²³ | 346.0 | 100.0% | 96.0% |
| Gross Land Area | 360.3 | - | 100.0% |

¹⁷ Mainly service industries such as auto repairs

¹⁸ This effectively represents existing industrial land demand

¹⁹ Net lot area represents gross land area minus non-site land uses such as local roads and parks

Business & land owner insights

Responses

The survey response rate is shown in Figure 9 below. Note that some business owners surveyed were also landowners and therefore also completed landowner surveys.

FIGURE 9 SURVEY RESPONSE RATE

| | Total | Responses | Response Rate |
|--------------------|-------|-----------|---------------|
| Business surveys | 193 | 62 | 32% |
| Land owner surveys | 193 | 26 | 13% |

Source: SGS Economics and Planning

Business activity

Five key types of business activities were identified in the Shire of Moorabool. Collectively they account for 76% of all employment in industrial and special use zoned lands:

- Manufacturing
- Mining
- Transport, postal and warehousing
- Agriculture
- Other Services

The surveys found that most businesses are employing similar numbers of workers today compared to two years ago. Transport, postal and warehousing appears to be performing particularly well, as three of four businesses surveyed indicated that their staffing levels have increased over the past few years (Figure 10).

Most businesses in other industries have either indicated no change or a slight decline in employee numbers. This is usually due to either a downsizing of operations or the businesses becoming less labour intensive – which is often the case for industrial businesses in non-metropolitan areas.

FIGURE 10 EMPLOYMENT TRENDS ACROSS INDUSTRIES

| EMPLOYMENT TRENDS ACROSS INDUSTRIES | | | | | |
|---|-----------|------------|------------|-----------|-----------|
| Industry | 2017 | 2018 | 2019 | 2020 | 2021 |
| Transport, postal and warehousing | 67% | 33% | 0% | 3 | 1 |
| Manufacturing | 8% | 58% | 33% | 12 | 11 |
| Other Services | 7% | 47% | 47% | 15 | 0 |
| Mining | 0% | 100% | 0% | 5 | 0 |
| Retail trade | 0% | 100% | 0% | 2 | 1 |
| Electricity, gas, water and waste services | 0% | 100% | 0% | 1 | 0 |
| Administrative and support services | 0% | 100% | 0% | 1 | 0 |
| Unidentified industrial | 0% | 100% | 0% | 1 | 0 |
| Wholesale trade | 0% | 67% | 33% | 3 | 1 |
| Construction | 0% | 50% | 50% | 2 | 0 |
| Professional, scientific and technical services | 0% | 0% | 0% | 0 | 1 |
| Arts and Recreation Services | 0% | 0% | 0% | 0 | 2 |
| TOTAL | 77 | 222 | 222 | 77 | 22 |

Source: SGS Economics and Planning survey data

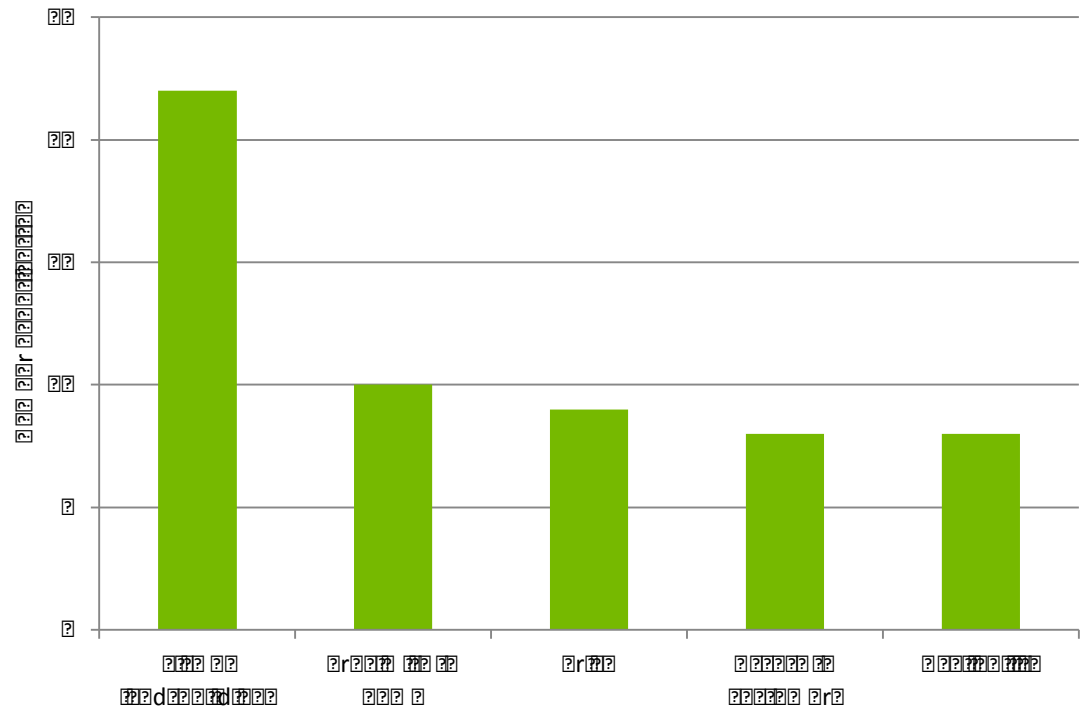
Locational attributes

The size of the sites and buildings available was consistently nominated by businesses as the main advantage of industrial operations in Moorabool.

Unsurprisingly, distance and remoteness were commonly identified as a significant weakness of industrial land in Moorabool. Whilst this is somewhat intrinsic to employment land in a rural Shire, the issue can be somewhat mitigated by improvements to transport infrastructure in the precincts.

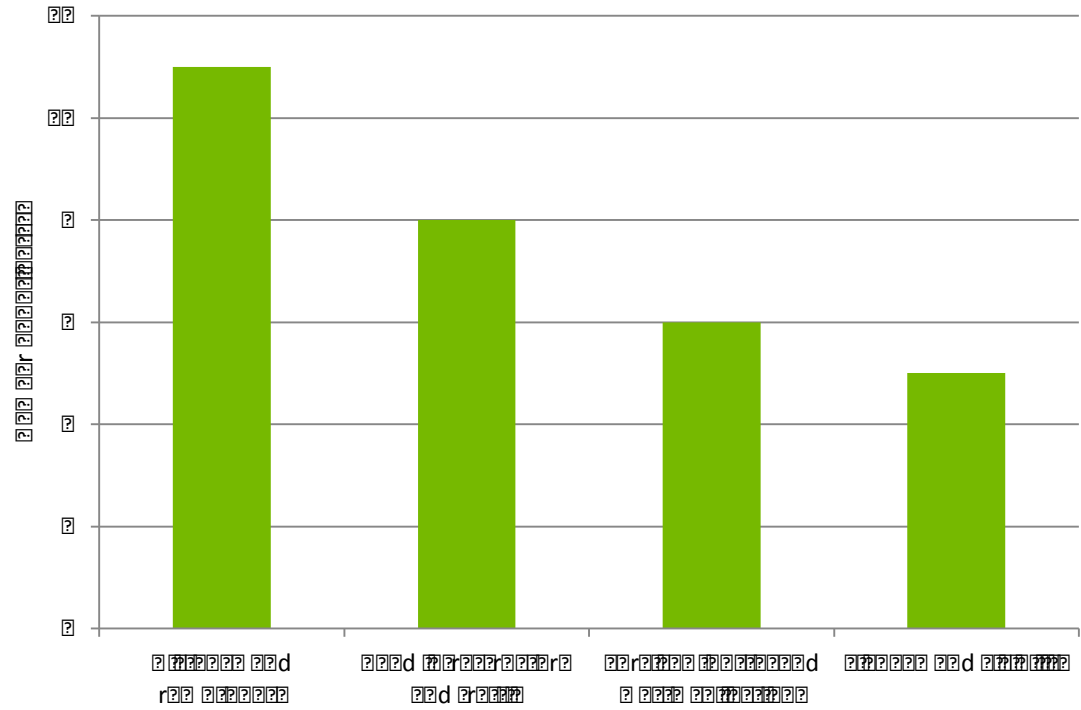
Overall though, the majority of respondents were found to be satisfied with their current location, particularly manufacturers.

FIGURE 11 POSITIVE LOCATION ATTRIBUTES IN INDUSTRIAL PRECINCTS



Source: SGS Economics and Planning survey data

FIGURE 12 NEGATIVE LOCATION ATTRIBUTES IN INDUSTRIAL PRECINCTS



Source: SGS Economics and Planning survey data

New investment

Encouraging evidence of new investment was found. 25 of the 62 businesses surveyed (40%) were identified as new investments in Moorabool's industrial lands, and have located in their precinct in the last five years (since 2009). Collectively, these 25 businesses employ a total of 148 people. On average, businesses have been in operation from their current location for an average of 10 years, with 10 business having first been established in their location before 1990.

FIGURE 13 YEAR OF BUSINESS ESTABLISHMENT

| Industry | Since 2010 | 2000 to 2009 | 1990 to 1999 | Pre 1990 |
|---|------------|--------------|--------------|-----------|
| Administrative and support services | 1 | | | |
| Arts and Recreation Services | 2 | | | |
| Construction | | 1 | | 1 |
| Electricity, gas, water and waste services | | 1 | | |
| Manufacturing | 5 | 11 | 1 | 4 |
| Mining | | | | 3 |
| Other Services | 5 | 7 | 2 | 1 |
| Professional, scientific and technical services | | 1 | | |
| Retail trade | 2 | 1 | | |
| Transport, postal and warehousing | 1 | 1 | | 1 |
| Wholesale trade | 2 | 2 | | |
| Total | 18 | 25 | 3 | 10 |

Source: SGS Economics and Planning survey data

Some businesses were originally new start-ups in Moorabool, whilst others have relocated from sites across the broader region in locations such as Melton, Laverton, Sunshine, Gisborne and Werribee. Note that the general pattern of these movements has been east to west; most of these former locations are suburbs of Western Melbourne.

Future plans

In terms of future plans, the outlook was generally positive. 84% of surveyed businesses expressed no intention to change their location. Of the remaining 16%, half were intending to relocate in the near future, whilst the other half had longer term agendas to relocate.

Approximately 60% of businesses felt that their operations would grow in the near future. Only 4% predicted a decline, with the remaining 35% predicting no significant change. The pattern was relatively even across all industries, although it should be noted that no manufacturing businesses expected a decline in their operations.

Ownership patterns

Approximately half of all businesses surveyed are also landowners of their respective sites. Ownership rates are particularly high for the more land intensive uses. Heavily built out sites have generally seen greater levels of long term capital investment. Businesses that commit to higher levels of long term investment generally (but not always) also own their site. If leasing a site, a business is less likely to construct buildings in addition to what is already in place.

The majority (81%) of businesses that lease their site are on fixed term leases, which allows the businesses to plan forward with some degree of certainty in terms of tenure.

FIGURE 14 OWNERSHIP IN INDUSTRIAL PRECINCTS

| Industry | % Own |
|---|------------|
| Mining | 100% |
| Transport, postal and warehousing | 100% |
| Electricity, gas, water and waste services | 100% |
| Unidentified industrial | 100% |
| Other Services | 67% |
| Retail trade | 67% |
| Construction | 50% |
| Manufacturing | 43% |
| Wholesale trade | 0% |
| Professional, scientific and technical services | 0% |
| Arts and Recreation Services | 0% |
| Administrative and support services | 0% |
| Average | 55% |

Source: SGS Economics and Planning survey data

Future landowner plans

Of the 26 landowners surveyed, 14 stated that they would prefer to continue with their existing use on site. Of those landowners which are planning redevelopments, most would like to continue with an industrial use after redevelopment.

Three landowners in Maddingley expressed some interest in accommodating a retail component within their future redevelopment. This is a common trend for industrial lands across Victoria – particularly those in close proximity to population catchments.

The underlying cause is that whilst some degree of manufacturing and assembly still occurs in Australia, competitive advantage is increasingly derived through effective marketing and sales. A business which already owns or leases a site in close proximity to large population centres would be looking to leverage this locational advantage for marketing and sales purposes. Possessing a retail frontage cuts costs significantly, as it can often remove the need for a separate retail outlet.

Implications

The combined land audit and survey results indicate that economic activity in Moorabool's industrial lands are diverse, generally resilient, and sustains a reasonable level of employment.

The business operations in Moorabool are adjudged to be stable; more than half of the businesses surveyed own the site on which they operate and most of the other landowners surveyed have expressed little intention to redevelop their land for purposes other than industrial or employment related operations.

Agricultural and mining activities were found to be scattered across the Shire, whilst core industrial activities were largely clustered around Ballan and Maddingley.

Manufacturing activities in particular, are attracted to Moorabool due to the large lot sizes on offer for reasonable costs. Manufacturing businesses are sensitive to accessibility, and so tend to be located in the eastern half of the Shire near major road connections in order to maximise access to Metropolitan Melbourne. These preferences for large lots with good accessibility are likely to become increasingly significant in the future.

Service oriented businesses on the other hand, benefit significantly from proximity to population centres, exposure and passing traffic. These businesses would struggle to be viable in isolated industrial precincts that possess poor access to customers in population centres.

Given that 45.5% of industrial zoned lands were found to be either vacant or possess agricultural uses, there should be enough supply to accommodate more industrial business activity – provided that the appropriate supporting infrastructure is in place.



DEMAND ANALYSIS

This section provides an analysis of the relevant population, workforce and employment issues which may impact on demand for industrial lands in Moorabool's economy. The analysis provides a solid basis for employment forecasts by industry and the associated forecasts of land that will be required in the future.



Analysis of resident workforce

Moorabool is expected to become one of the fastest growing Shires in the region over the coming decades. With the population of the Shire expected to grow from 29,000 to 45,000 by 2031, new economic opportunities and challenges will emerge.

On the one hand, such strong levels of growth will generate significant ongoing stimuli for the local and regional economy. Retail, health and service industries are all likely to grow in line with population levels. On the other hand, a larger workforce will be present in the Shire. This larger workforce should provide the Shire with new competitive advantages – but only if the right economic activities can be attracted to the Shire.

FIGURE 15 POPULATION GROWTH - MOORABOOL (S), SURROUNDING REGIONAL SHIRES AND WESTERN MELBOURNE REGION, 2001-2031

| Region | 2001 | 2011 | AAGR (2001-2011) | 2021 | 2031 | AAGR (2011-2031) |
|--------------------------|---------------|---------------|---------------------|---------------|---------------|---------------------|
| Greater Geelong (C) | 191,534 | 215,837 | 1.20% | 249,342 | 288,806 | 1.47% |
| Ballarat (C) | 82,333 | 95,185 | 1.46% | 116,669 | 142,002 | 2.02% |
| Golden Plains (S) | 14,872 | 18,958 | 2.46% | 24,057 | 28,610 | 2.08% |
| Hepburn (S) | 14,268 | 14,629 | 0.25% | 16,038 | 17,777 | 0.98% |
| Macedon Ranges (S) | 37,325 | 42,883 | 1.40% | 48,297 | 55,908 | 1.34% |
| Moorabool (S) | 24,839 | 28,670 | 1.44% | 36,361 | 44,979 | 2.28% |
| Western Melbourne Region | 689,963 | 919,857 | 2.92% | 1,206,446 | 1,502,923 | 2.49% |

Source: ABS ERP; VIF 2014

It is critical then, to understand the key characteristics of Moorabool's future workforce. Figure 16 below illustrates the changing age structure of Moorabool's resident population over a 30 year timeframe (2001 to 2031).

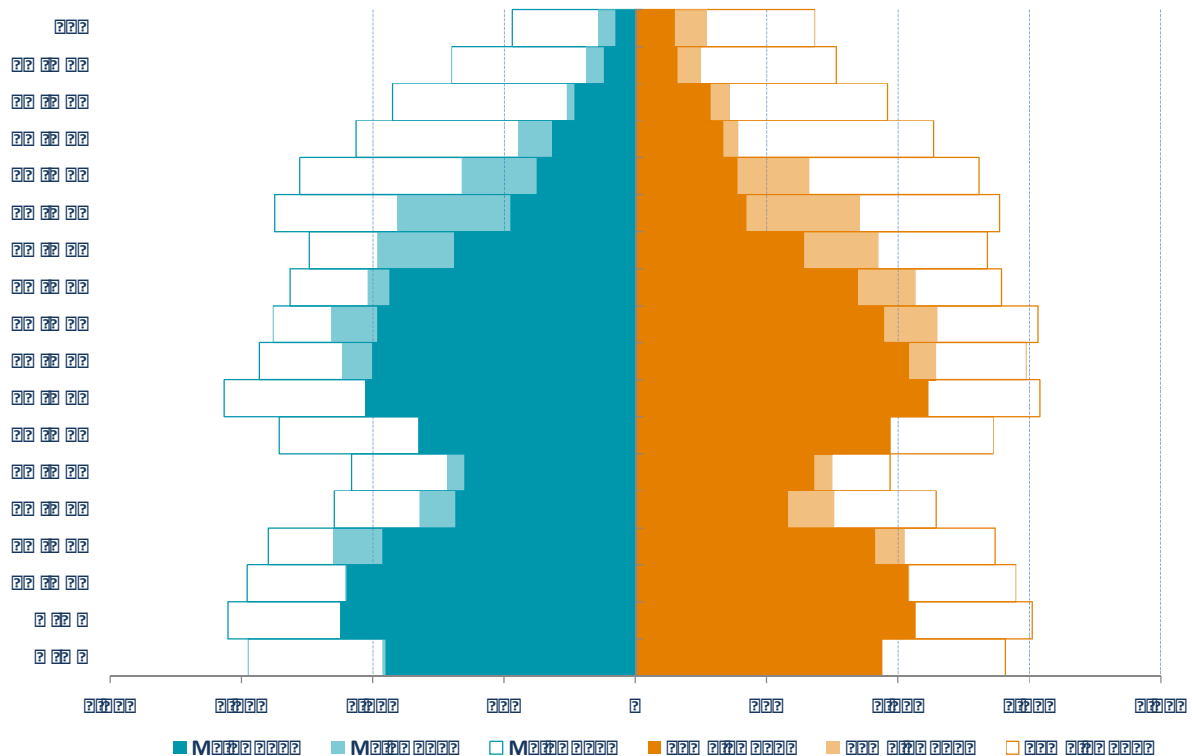
A number of observations can be made from this chart:

- Moorabool will continue to possess a relatively experienced workforce
- There is a general gender balance
- A significant increase is projected in the senior citizen cohort (over-60s)

The future age profile of Moorabool residents is also indicative of a Shire with a large cohort of families. Families are often time poor, with the option of employment opportunities closer to home vital to healthy communities in such cases.

A relatively experienced workforce will require strong employment prospects that offer opportunities commensurate to middle-aged adults. Businesses seeking experienced employees should find Moorabool to its liking.

FIGURE 16 AGE PROFILE - MOORABOOL (S), 2001-2031

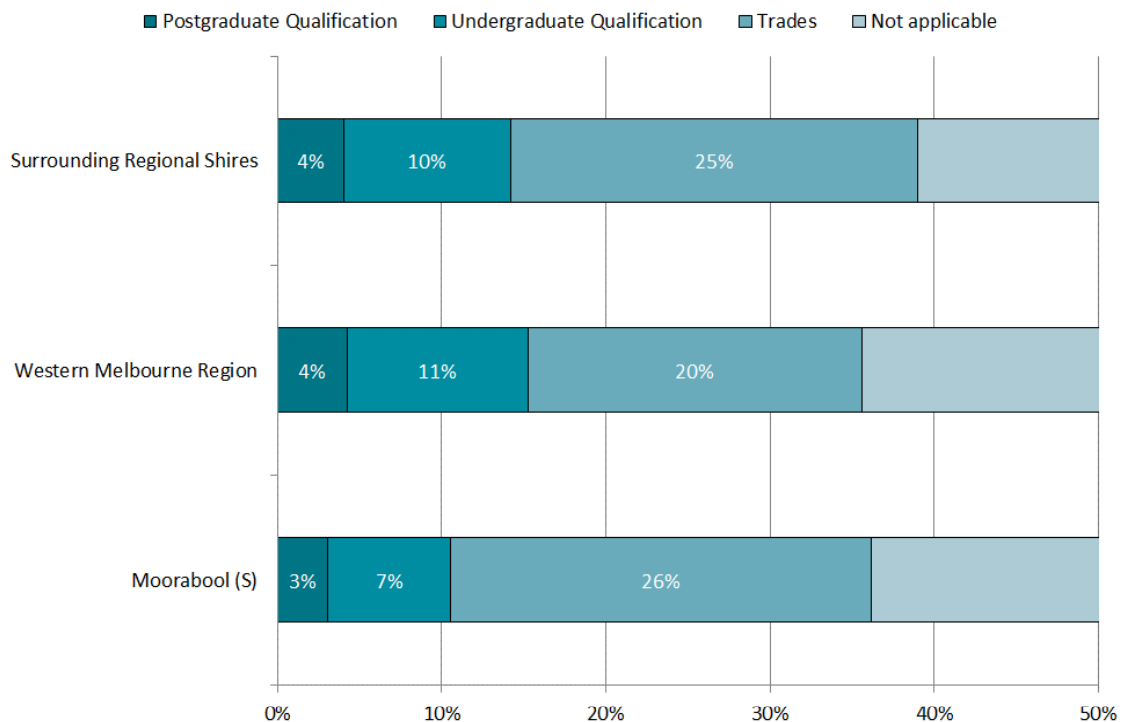


Source: ABS Census 2011; VIF 2014

The major potential strength *or* weakness with an experienced workforce is its ability to innovate and keep up with the latest trends in business and industry. As such this workforce would benefit greatly from opportunities to up-skill and build on their existing education and training. Tertiary education and training opportunities involving short courses in the trades would allow this workforce to gain a greater depth and breadth of core industrial skills.

Figures 17 and 18 show that presently, the majority of Moorabool's workforce is well trained in the trades. Tertiary courses in business and commerce are somewhat under-represented and could also be useful, as many experienced employees of a more entrepreneurial persuasion may be interested in establishing start-up businesses. The greatest risk for the Shire in terms of start-ups is that many fail within a few years. Often this has little to do with technical ability or experience. Rather, it is the ability of an experienced technician to develop commercial acumen and entrepreneurial nous which determines whether their start-ups grow into established players in the industrial economy. Opportunities for training in the Management and Commerce fields should help to stimulate small business formation and eventually, growth.

FIGURE 17 EDUCATIONAL ATTAINMENT – MOORABOOL, SURROUNDING REGIONAL SHIRES AND WESTERN MELBOURNE REGION, 2011



Source: ABS Census

FIGURE 18 NEW QUALIFICATIONS – MOORABOOL'S RESIDENT WORKFORCE, 2001-2011

| | Agriculture, Forestry and Fishing | Mining | Manufacturing | Electricity, Gas, Water and Waste Services | Construction | Transport, Postal and Warehousing | Other Services |
|--|-----------------------------------|--------|---------------|--|--------------|-----------------------------------|----------------|
| Natural and Physical Sciences | 6 | 9 | 28 | 3 | 5 | 6 | 7 |
| Information Technology | 4 | 0 | 8 | 0 | 0 | 9 | 0 |
| Engineering and Related Technologies | 41 | 46 | 415 | 54 | 297 | 188 | 153 |
| Architecture and Building | 5 | 3 | 37 | 5 | 447 | 13 | 11 |
| Agriculture, Environmental and Related Studies | 105 | 4 | 16 | 7 | 31 | 20 | 9 |
| Health | 16 | 0 | 17 | 5 | 9 | 20 | 14 |
| Education | 10 | 0 | 3 | 0 | 13 | 9 | 8 |
| Management and Commerce | 30 | 6 | 108 | 14 | 59 | 66 | 14 |
| Society and Culture | 11 | 0 | 10 | 3 | 18 | 15 | 28 |
| Creative Arts | 4 | 0 | 14 | 3 | 6 | 5 | 4 |
| Food, Hospitality and Personal Services | 8 | 0 | 21 | 3 | 18 | 19 | 67 |

Source: ABS Census

Projected employment

SGS has developed local area employment forecasts for all councils across Victoria. The projections are based on a 'top-down' and 'bottom-up' approach which combine robust macro-economic models with a detailed understanding of local area trends and supply patterns. The results have been utilised in a wide range of state and local assignments and scrutinised heavily.

Below presents a summary of Moorabool's recent and projected employment growth within the manufacturing sector. The data is presented in a table format, showing the number of employees in the manufacturing sector for the years 2001, 2006, 2011, and 2016. The table also includes a column for the percentage change in employment between 2001 and 2016.

FIGURE 19 HISTORICAL AND PROJECTED EMPLOYMENT, 2001-2031

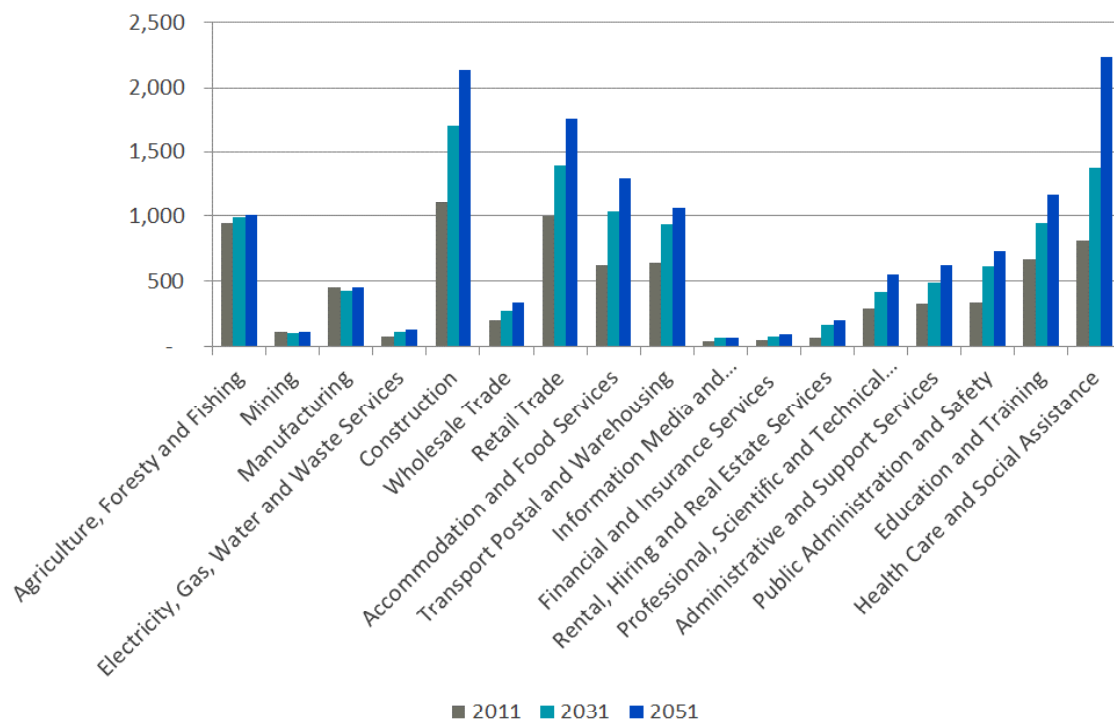
| | 2006 | 2011 | 2021 | 2031 |
|------------------------------------|---------|---------|---------|---------|
| Moorabool (S) | | | | |
| Employment | 6,674 | 7,855 | 9,946 | 11,450 |
| Change | | 1,181 | 2,091 | 1,504 |
| Growth rate | | 3.3% | 2.4% | 1.4% |
| Western Melbourne Region | | | | |
| Employment | 304,766 | 334,161 | 397,757 | 457,538 |
| Change | | 29,396 | 63,595 | 59,782 |
| Growth rate | | 1.9% | 1.8% | 1.4% |
| Surrounding Regional Shires | | | | |
| Employment | 150,990 | 171,822 | 199,245 | 230,212 |
| Change | | 20,832 | 27,424 | 30,967 |
| Growth rate | | 2.6% | 1.5% | 1.5% |

Source: Moorabool Shire Council, 2016

The manufacturing sector is expected to continue to be the fastest growing sectors of Moorabool's economy over the next 20 years. The manufacturing sector is expected to continue to be the fastest growing sectors of Moorabool's economy over the next 20 years.

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FIGURE 20 EMPLOYMENT BY INDUSTRY - MOORABOOL, 2011-2051²²²



222 2011 is the census figure. 2031 and 2051 are projections.

2.2.2 Gross Value Added and productivity

Employment growth is not the only driver of demand for industrial lands. Growth in capital stock²²³ must also be considered because some industries are becoming more capital intensive. In other words, businesses in those industries may not necessarily be employing more staff, but their demand for industrial land and floorspace is still increasing due to their acquisition of property, plant and equipment.

One macroeconomic measure of such trends in capital intensity is the Gross Value Added (GVA) per worker. GVA (in isolation) measures the dollar value that each business or industry contributes to their component of the supply chain. GVA per worker then, measures proportional contribution of labour (or employees) to this value creation. An increase in GVA per worker can primarily be explained by two factors:

- Increases in the overall value of commodities traded. Most common to raw materials in the mining industry. This increase may either be due to an increase in the quantum of materials sold or an increase in the market value of raw materials per unit.
- Improvements to worker productivity, which is most profound in Knowledge Intensive Business Services (KIBS), where each worker is generating new knowledge independent of capital investments.
- Improvements to the value and/or quantum of property, plant and equipment, which is more common to industrial businesses, particularly Manufacturers in regional areas.

When GVA per worker in a particular industry is increasing, then it is highly likely that businesses are utilising more property, plant and equipment (capital). This in turn drives demand for more floorspace and land.

²²² 2011 is the census figure. 2031 and 2051 are projections.

²²³ In accounting, long term capital stock is commonly referred to as PP&E - property, plant and equipment.

Figure 21 focuses on GVA per worker (by industry) in the Shire of Moorabool. Figure 19 demonstrates that on average, each Manufacturing and Transport worker produces above average levels of GVA compared to the average industry in Moorabool.

Figure 21 also shows that for Manufacturing in particular, GVA per worker has increased significantly over the past decade. In fact, Manufacturing is one of only five industries in Moorabool which have generated improvements in this metric. In regional areas, this is usually due to increased levels of capital intensity and should translate into greater demands for floorspace and land.

Hence although Manufacturing employment in Moorabool is stagnating, GVA per worker and demand for property, plant and equipment is increasing. Given that large lot sizes are one of the major competitive advantages of industrial lands in Moorabool Shire, ensuring a sufficient supply of industrial lands should be ongoing priority worth monitoring.

FIGURE 21 GVA PER JOB (KEY INDUSTRIAL USES HIGHLIGHTED IN BROWN)

| Industry | Annual GVA per worker (\$million) 2011 | % Change GVA per job 2001 to 2011 |
|---|---|--------------------------------------|
| Administrative & Support Services | 0.07 | 57% |
| Manufacturing | 0.10 | 26% |
| Health Care & Social Assistance | 0.05 | 25% |
| Mining | 1.19 | 18% |
| Information Media and Telecommunications | 0.08 | 2% |
| Professional, Scientific & Technical Services | 0.06 | -2% |
| Other Services | 0.05 | -3% |
| Wholesale Trade | 0.09 | -8% |
| Education & Training | 0.08 | -14% |
| Agriculture, Forestry & Fishing | 0.10 | -15% |
| Retail Trade | 0.04 | -15% |
| Construction | 0.06 | -17% |
| Financial & Insurance Services | 0.23 | -19% |
| Transport, Postal & Warehousing | 0.09 | -26% |
| Arts & Recreation Services | 0.07 | -32% |
| Public Administration and Safety | 0.07 | -46% |
| Rental, Hiring and Real Estate Services | 0.14 | -46% |
| Accommodation and Food Services | 0.02 | -55% |
| Electricity, Gas, Water and Waste | 0.09 | -55% |
| Average | 0.08 | -15% |

Source: SGS Economics and Planning

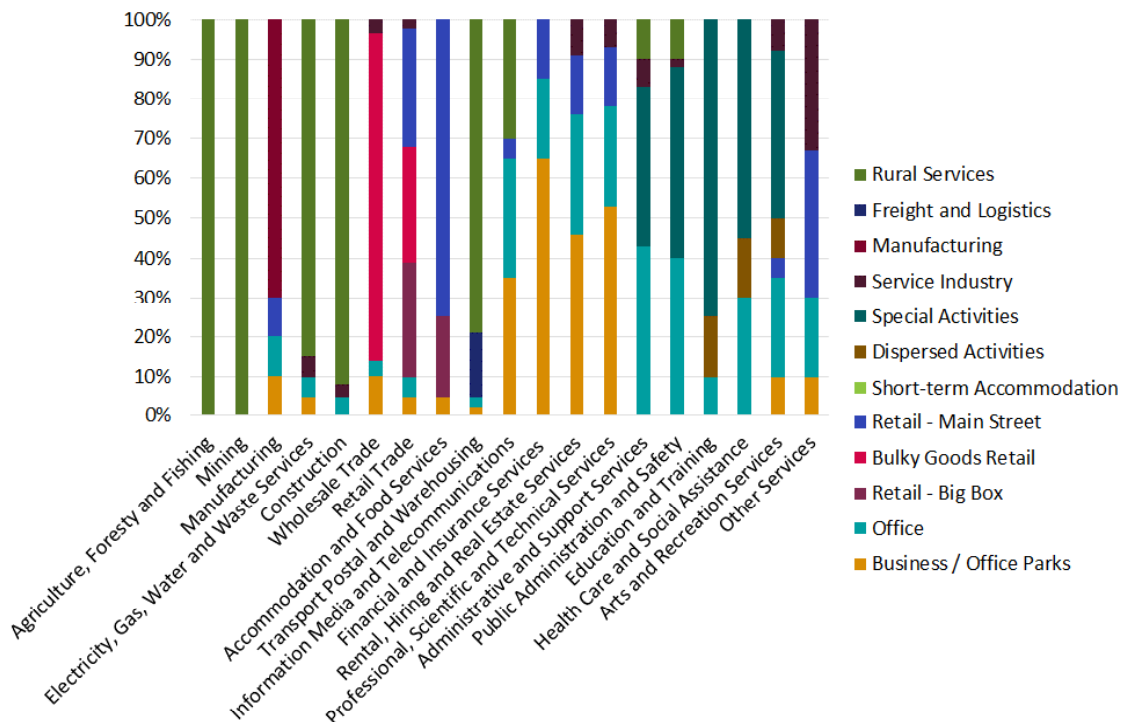
Industrial land forecasts

SGS has translated detailed employment by industry projections for Moorabool into requirements for industrial land using a series of detailed and robust assumptions regarding employment land use propensities. The assumptions are transparent and based on robust research and industry tested data.

The first step involves translating employment by industry classifications into employment by broad land use categories. Figure 22 below presents the assumed breakdown of employment for each industry. These breakdown ratios are based on an analysis of detailed sub-industry classifications (3 digit ANZSIC) for Moorabool and from extensive land use audits completed by SGS around Australia (including in Moorabool itself).

The land use audits involved a survey of businesses to establish standard ratios for employment to land use (area). It uncovers the extent to which certain types of businesses are more or less likely to be land intensive.

FIGURE 22 EMPLOYMENT INDUSTRY BY BROAD LAND USE TYPE –TAILORED TO MOORABOOL



Source: SGS Economics and Planning

This approach captures the requirements of all employment, rather than simply focusing on a selection of key sub-industries. This ensures a holistic understanding of the land use needs in Moorabool is developed. For example, Wholesaling continues to be predominantly a Freight and Logistics land use, but some components of their operations (e.g. the head office) may be located in business/office parks. Such issues are considered for all industries.

Separate floorspace ratios are now applied to each broad land use type to determine a total floorspace requirement. Similarly separate floorspace to land area ratios are applied to convert the floorspace (or building footprint) to a total site area. The results of this analysis are presented in Figure 23 below. Based on this approach the far right column shows the existing demand estimate for employment land in Moorabool as of 2011, which broadly aligns with current land uses. Note that these 2011 numbers have been sense checked against our 2014 survey results.

FIGURE 23 ESTIMATED EMPLOYMENT LANDS DEMAND, 2011

| Land Use Type | Total Jobs | Floorspace per Job | Floorspace | | Floorspace to Land Ratio | Land Area |
|-------------------------------|--------------|--------------------|----------------|-----|--------------------------|--------------|
| | | <i>sqm</i> | <i>sqm</i> | % | <i>sqm</i> | <i>ha</i> |
| Business / Office Parks | 395 | 50 | 19,760 | 50% | 39,520 | 4.0 |
| Office | 885 | 30 | 26,553 | 60% | 44,255 | 4.4 |
| Retail - Big Box | 414 | 100 | 41,400 | 80% | 51,750 | 5.2 |
| Bulky Goods Retail | 454 | 120 | 54,480 | 30% | 181,600 | 18.2 |
| Retail - Main Street | 874 | 30 | 26,205 | 40% | 65,513 | 6.6 |
| Dispersed Activities | 222 | 40 | 8,880 | 30% | 29,600 | 3.0 |
| Special Activities | 1,243 | 70 | 87,024 | 40% | 217,560 | 21.8 |
| Service Industry | 226 | 160 | 36,112 | 9% | 419,907 | 42.0 |
| Manufacturing | 313 | 185 | 57,859 | 8% | 725,047 | 72.5 |
| Freight and Logistics | 102 | 58 | 5,939 | 19% | 31,591 | 3.2 |
| Rural Services ²²² | 2,734 | 200 | 546,760 | 10% | 5,467,600 | 546.8 |
| Total | 7,862 | | 910,972 | | 7,273,943.0 | 727.4 |

Source: SGS Economics and Planning

Utilising this approach, employment demand requirements by broad land use type are presented in Figure 24 for 2031 and 2051. From this we can observe that over the next 35 years employment land requirements will increase significantly, reflecting the combined growth in employment and GVA which have both been taken into account in this modelling. Service industry will require the greatest levels of increased industrial land supplies in order to keep pace with population growth. Note that the three land uses which require industrial zoning have been highlighted.

FIGURE 24 EMPLOYMENT LANDS DEMAND FORECAST (HA), 2011 - 2051

| Land Use Type | 2011 | 2031 | 2051 | 2011-51 |
|-------------------------|--------------|--------------|----------------|--------------|
| Business / Office Parks | 4.0 | 5.9 | 7.3 | 3.3 |
| Office | 4.4 | 7.0 | 9.4 | 5.0 |
| Retail - Big Box | 5.2 | 7.6 | 9.6 | 4.4 |
| Bulky Goods Retail | 18.2 | 25.0 | 31.5 | 13.3 |
| Retail - Main Street | 6.6 | 10.1 | 12.6 | 6.0 |
| Dispersed Activities | 3.0 | 4.7 | 6.8 | 3.9 |
| Special Activities | 21.8 | 34.3 | 47.4 | 25.6 |
| Service Industry | 42.0 | 61.7 | 79.3 | 37.3 |
| Manufacturing | 72.5 | 70.3 | 76.2 | 3.7 |
| Freight and Logistics | 3.2 | 4.7 | 5.5 | 2.3 |
| Rural Services | 546.8 | 724.2 | 838.5 | 291.8 |
| Total | 727.4 | 955.6 | 1,123.9 | 396.5 |

Source: SGS Economics and Planning

Figure 25 below summarises the final employment demand (2051) for the three land uses which require industrial zoning. For the purposes of this employment land study. The final results indicate that by 2051, the *combined* demand for Industrial Zoned lands will be at **161 hectares**. Note that as we found various types of businesses in both Industrial 1 and Industrial 2 Zoned lands, no distinct differentiation was made between the two zones in our projections.

²²² This category is primarily comprised of Agricultural and Mining land uses

FIGURE 25 INDUSTRIAL ZONED LAND DEMAND BY 2051

| Land Use | 2011 | 2031 | 2051 |
|-------------------------------------|--------------|--------------|--------------|
| Service Industry | 42.0 | 61.7 | 79.3 |
| Manufacturing | 72.5 | 70.3 | 76.2 |
| Freight and Logistics | 3.2 | 4.7 | 5.5 |
| Total Industrial Land Demand | 117.7 | 136.8 | 161.0 |

Source: SGS Economics and Planning

Note that these projections are sensitive to exogenous factors. In particular, demand for land in Manufacturing and Transport & Logistics will be heavily reliant on the demand and supply equation in Western Melbourne.

Other significant sensitivities include:

- The impact of population growth trends on service industry
- The impact of the business cycle on manufacturing
- The impact of technology; new innovations can have profound impacts on the way Freight and Logistics operate (e.g. online shopping)

Summary

The analysis of economic trends suggest that with a rapidly growing population, the Shire of Moorabool will need to accommodate a greater levels of service industry in order to provide more local employment opportunities and services to both existing and future residents.

In the long term, the gradual take-up of employment land in Western Melbourne will ensure that a steady flow of businesses will seek to locate in more low cost employment precincts in the Shire of Moorabool.

Whilst much of this local employment growth can be supported by population driven sectors of the economy, there will be opportunities to grow other high value adding components of the economy. Many manufacturing businesses will require large lots with significant buffer distances²⁰. As a result, the Shire of Moorabool will need to ensure that sufficient Industrial Zoned lands are available for them.

²⁰ See Appendix B for clearer explanation and definition of different types of industrial land uses and their major distinctions



INFRASTRUCTURE ASSESSMENT



Existing infrastructure

A high level analysis of infrastructure relevant to industrial development has been conducted. This section's analysis focuses on key trunk infrastructure and transport. The analysis will draw on Council's GIS datasets and has been supplemented with information from the consultation and site visits. The key infrastructure analysed here include:

- Gas
- Water
- Sewerage
- Electricity
- Sealed roads

As a means of analysing existing and potential infrastructure constraints, maps have been presented to highlight the extent to which areas are well serviced. Figure 26 summarises the results of this infrastructure audit. Note that the focus is primarily on the five Industrial zoned precincts. The rankings explanations are contained in Figure 27 and mapped in Figures 28, 29 and 30.

Overall, the figures show the Maddingley 1 and Maddingley 2 precincts to be the best serviced industrial lands in the Shire, possessing the full complement of infrastructure supply. Accordingly, these precincts also possess relatively low levels of vacancies or lower value land uses (Agriculture). Ballan, despite only possessing electricity and sealed road access, is also performing well – an indicator that these are the bare necessities with which at least some businesses are able to function. Given that almost all industrial zoned lands in Moorabool possess decent access to electricity and sealed roads, there does not appear to be any overly significant constraints on land supply. Nonetheless, some improvements to gas, water or sewerage supply should raise the value and marketability of the Maddingley 4 and Parwan precincts as for potential industrial tenants and landowners.

FIGURE 26 ACCESSIBILITY TO INFRASTRUCTURE ACROSS ALL PRECINCTS

| Code | Precinct Name | Gas | Water | Sewerage | Electricity | Sealed Road | Total Score | Vacancy (ha) ²⁶ |
|------|----------------------|---------|---------|----------|-------------|-------------|-------------|----------------------------|
| A | Dunstown | None | None | None | Mostly | Mostly | 6 | 153.8 |
| B | Lal Lal | None | None | None | Mostly | Mostly | 6 | 29.3 |
| C | Ballan | None | None | None | Full | Full | 8 | 3.4 |
| D | Myrnion | None | Partial | None | Partial | Partial | 6 | 137.2 |
| E | Darley - Coimadai | None | Partial | None | Mostly | Partial | 7 | 317.9 |
| F | Merrimu | None | Full | None | Full | Full | 12 | 10.4 |
| G | Maddingley 1 | Full | Full | Full | Full | Full | 20 | 0.4 |
| H | Maddingley 2 | Full | Full | Full | Full | Full | 20 | 16.3 |
| I | Maddingley 3 | Partial | Partial | Partial | Mostly | Mostly | 12 | 500.2 |
| J | Maddingley 4 | Partial | Mostly | Partial | Full | Mostly | 14 | 90.0 |
| K | Rowsley 1 | None | None | None | None | Partial | 2 | 75.2 |
| L | Rowsley 2 | None | None | None | Minimal | Mostly | 4 | 111.4 |
| M | Rowsley 3 | None | None | None | Mostly | Mostly | 6 | 0.0 |
| N | Parwan ²⁷ | None | Partial | None | Mostly | Mostly | 8 | 116.7 |

Source: SGS analysis of Council's GIS data

FIGURE 27 RANKINGS FOR PRECINCT INFRASTRUCTURE SUPPLY

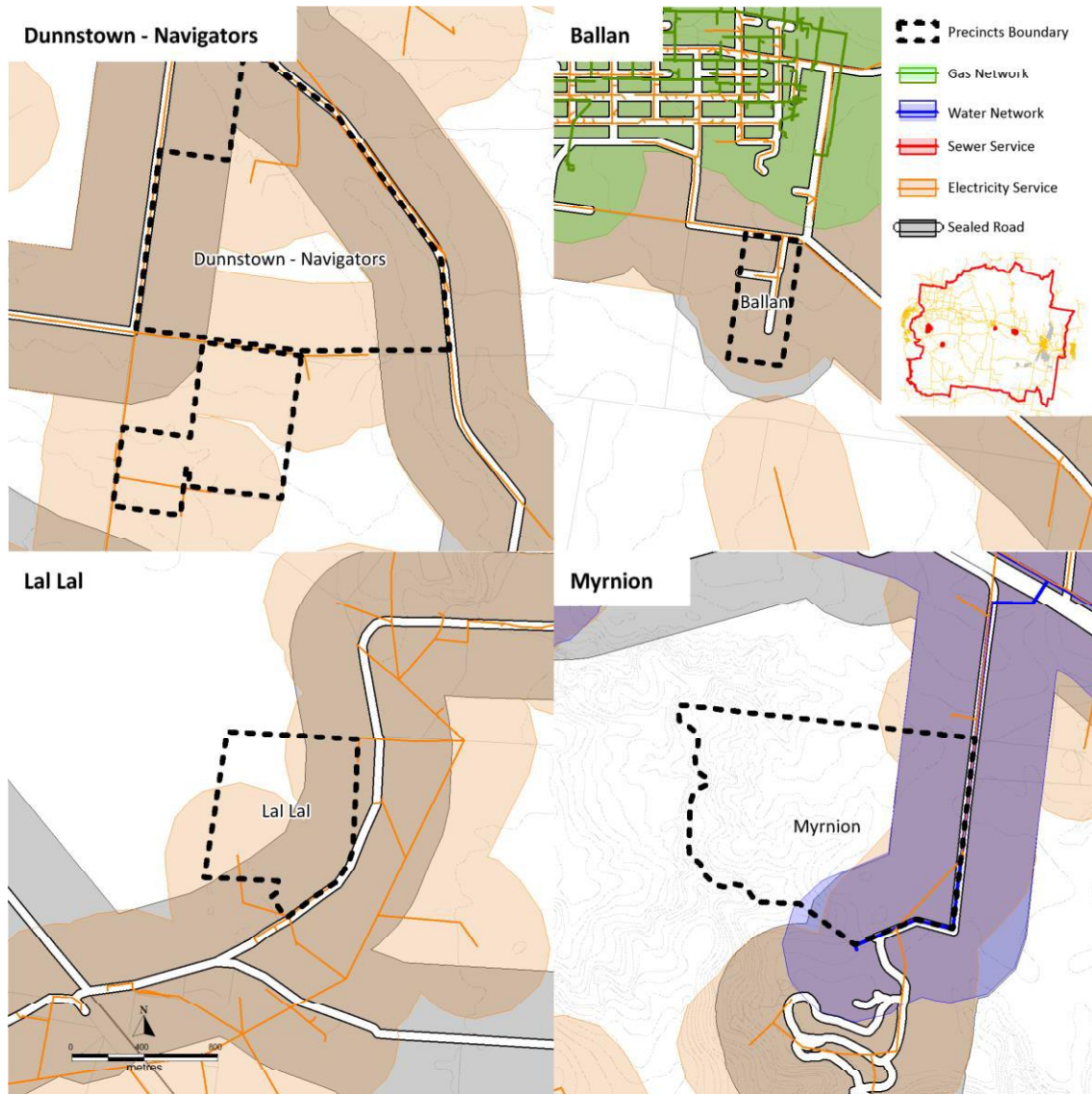
| Category | Proportion | Raw Score |
|----------|------------|-----------|
| Full | 100% | 4 |
| Mostly | 70% to 99% | 3 |
| Partial | 30% to 70% | 2 |
| Minimal | 1% to 30% | 1 |
| None | 0% | 0 |

Source: SGS

²⁶ Including agricultural land uses

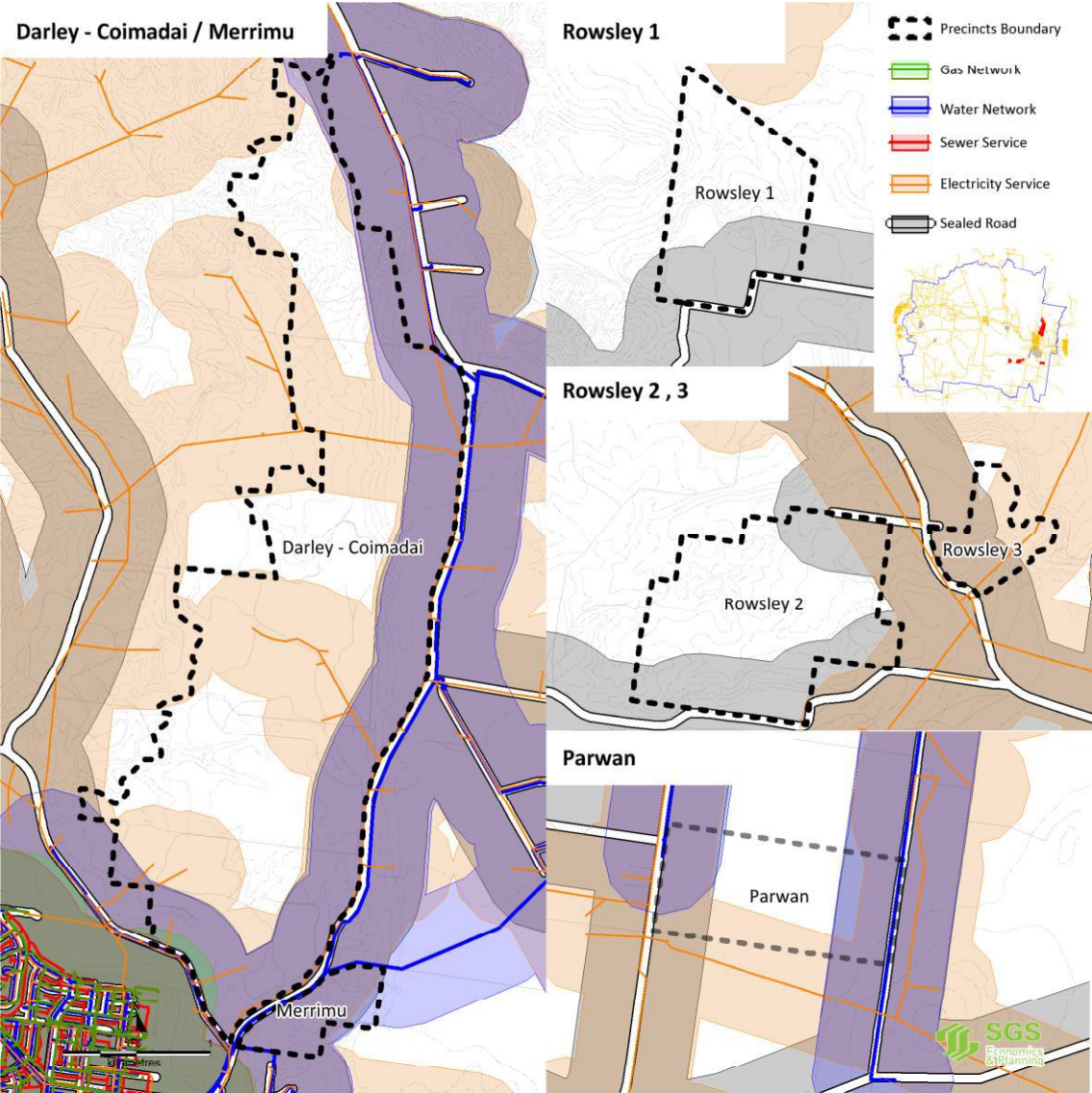
²⁷ Class C water available via treatment plant. All services are being reviewed at Parwan with the intention of preliminary costing for extension of gas main already in the western side of the Parwan study area. The gas main runs through the middle of Parwan. A full service audit is being conducted in the Parwan area.

FIGURE 28 INFRASTRUCTURE SUPPLY – DUNNSTOWN – NAVIGATORS, LAL LAL, BALLAN & MYRNION



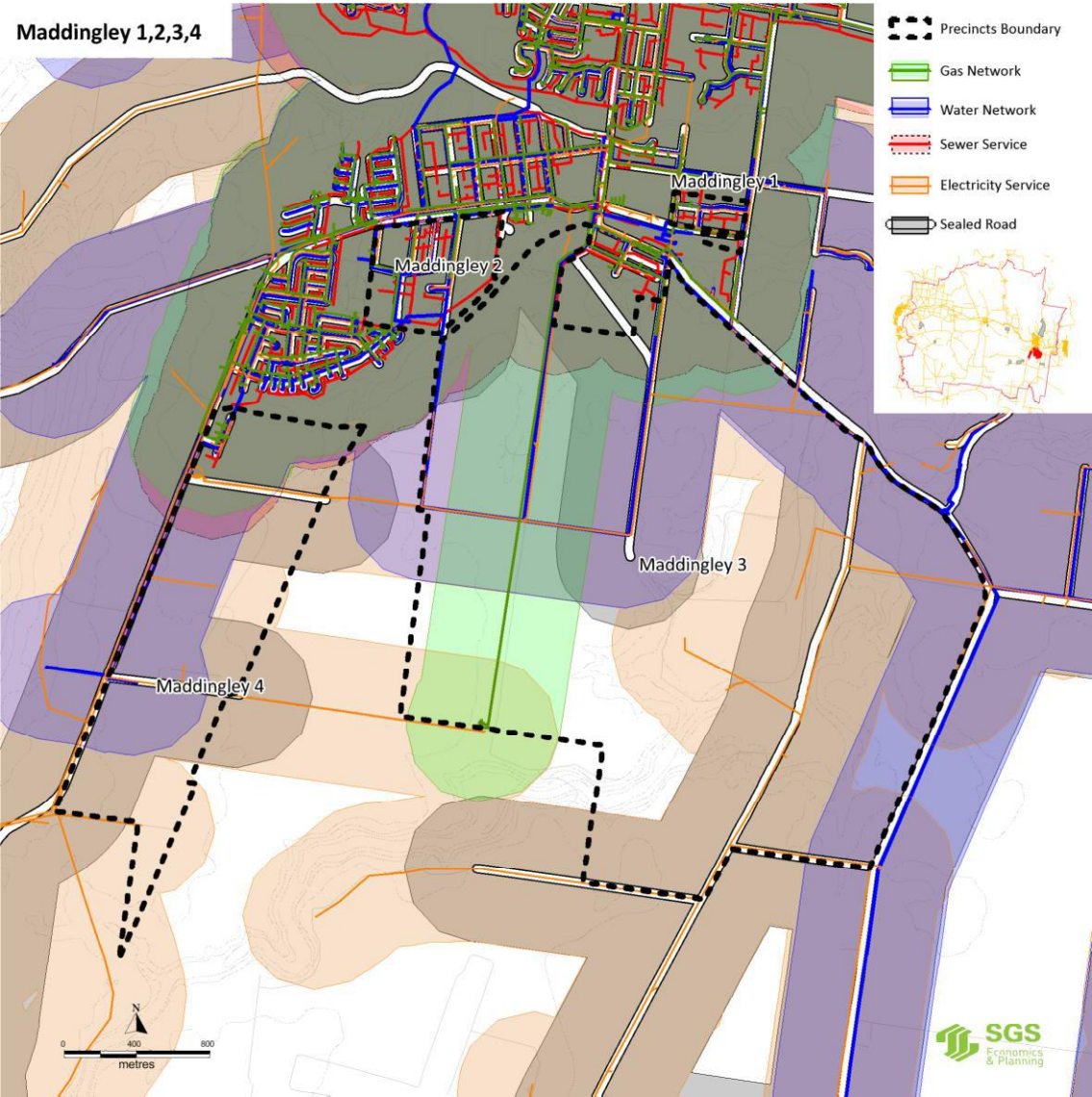
Source: SGS analysis of Council's GIS data

FIGURE 29 INFRASTRUCTURE SUPPLY - DARLEY-COIMADAI, MERRIMU, ROWSLEY 1, ROWSLEY 2, ROWSLEY 3 & PARWAN



Source: SGS analysis of Council's GIS data

FIGURE 30 INFRASTRUCTURE SUPPLY MADDINGLEY 1, MADDINGLEY 2, MADDINGLEY 3 & MADDINGLEY 4



Source: SGS analysis of Council's GIS data

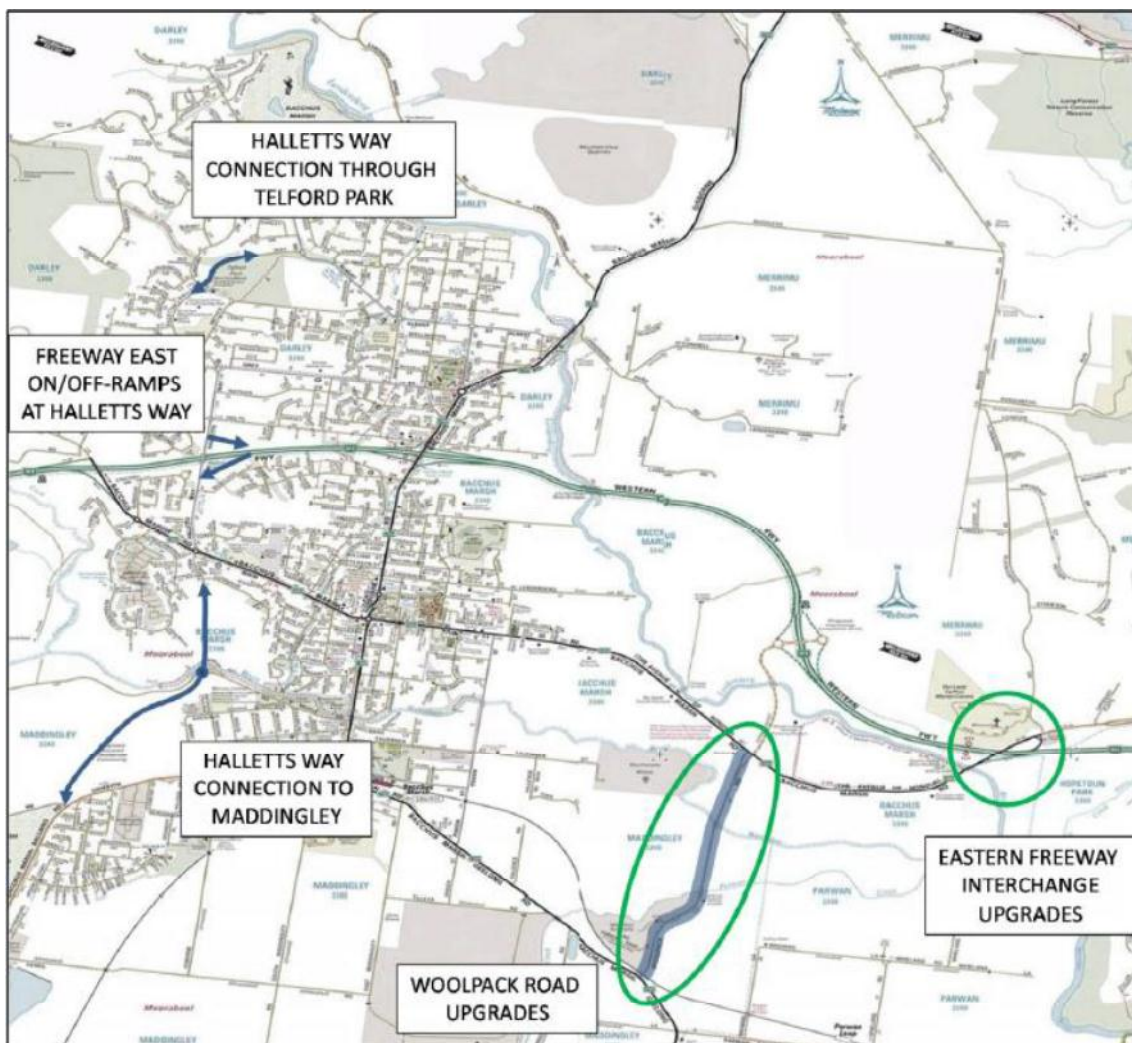
Proposed infrastructure

A number of road network upgrades are proposed in the short to medium term to improve accessibility and connectivity. The improvements proposed for road connections in and around Bacchus Marsh, including:

- Construction of an east facing freeway with on and off ramps at Halletts Way;
- Connection of Halletts Way through Telford Park in Darley;
- Connection of Halletts Way from Bacchus Marsh Road to Bacchus Marsh-Balliang Road/Griffith Street in Maddingley;
- Upgrade of Woolpack Road to an arterial road to be managed by VicRoads; and
- Upgrade of the freeway access arrangements at the eastern end of Bacchus Marsh Road.

The timing of these works will depend on agreements and cooperation between various stakeholders, including state and local authorities as well as private developers (Figure 31).

FIGURE 31 PROPOSED ROAD NETWORK UPGRADES AROUND BACCHUS MARSH



Source: Issues and Opportunities Study; Bacchus Marsh Transport Study, July 2 2014, Cardno

The Halletts Way extension is scheduled to be built in the short to medium term with the aim of enhancing access to and from the Western Freeway. In turn this will enable enhanced access to Maddingley 4 (Precinct J) as well as Maddingley 2 (Precinct H). The road network upgrades will improve accessibility to labour in particular.

Note that Council are currently focusing on the optimal north-south road linkages along with other aspects of integrated freight and passenger movement in Bacchus Marsh and will resolve priority corridor links in due course.



PRECINCT ANALYSIS

This precinct focuses the analysis on the key industrial zoned precincts in the Shire, and forms much of the basis for the recommendations in Sections 7 and 8.



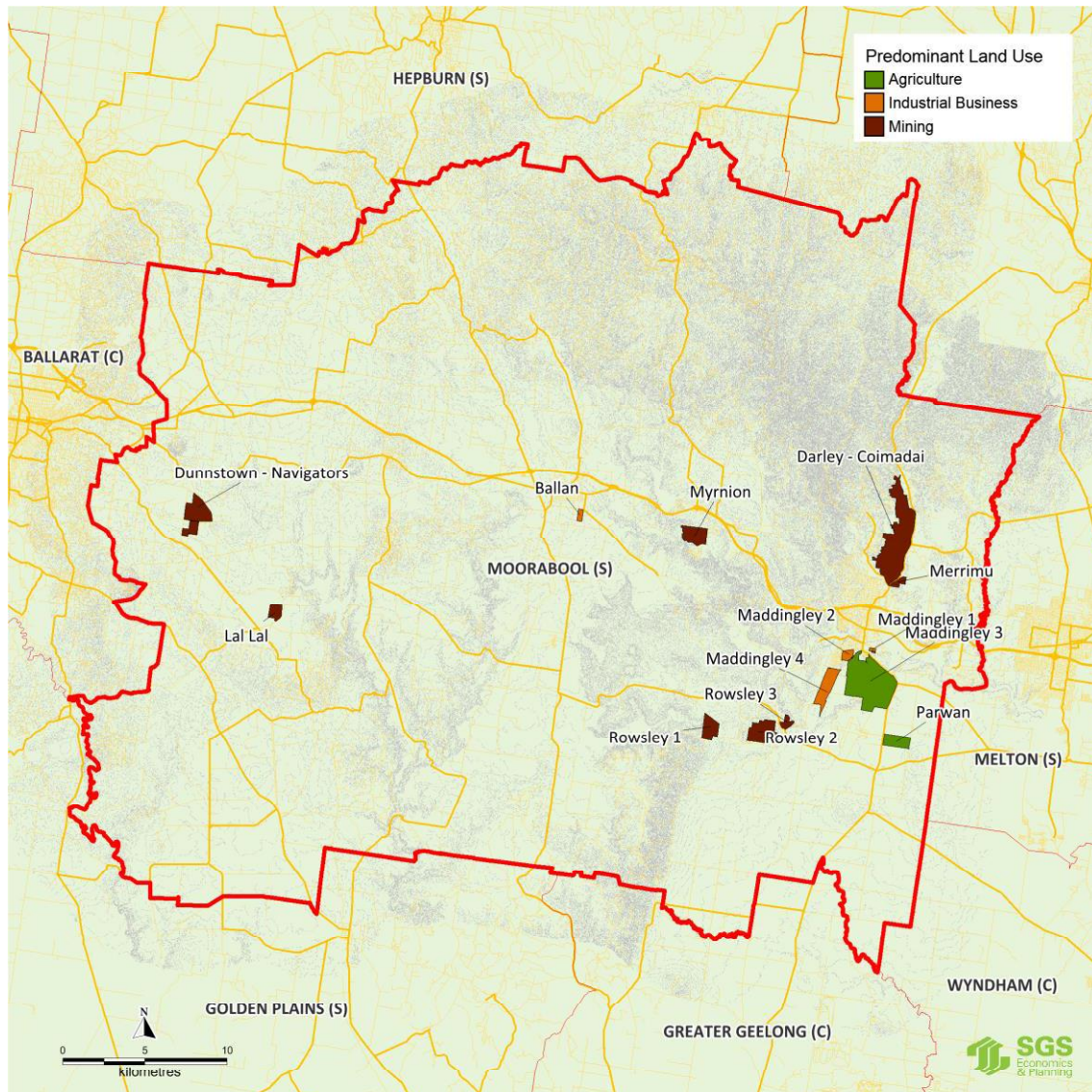
Overview

The industrial and special use zoned precincts of Moorabool lie largely on the eastern side of the Shire (with the exception of Dunnstown-Navigators and Lal Lal) and are zoned INZ1, INZ2, SUZ1 or SUZ2. This largely because the eastern precincts possess greater levels of connectivity to Metropolitan Melbourne.

The total site area of the 14 precincts is approximately 3,200 ha, the majority of which is used for agricultural purposes. **However, only precincts C, G, H and J are zoned Industrial 1 or Industrial 2, possess significant levels of (non-mining) industrial uses at present. The majority of our survey responses were also sourced from businesses and landowners in these four precincts. As such this sub-section focuses on these four precincts.** Special Use Zoned precincts are assumed to continue operating in a business-as-usual scenario, as we have no evidence to suggest otherwise.

Figure 32 below maps the location of these precincts, with Ballan and Maddingley possessing the greatest proportions of industrial business activities. Figure 33 summarises the level of employment found in each precinct.

**FIGURE 32 PREDOMINANT LAND USE OF VARIOUS INDUSTRIAL AND SPECIAL USE
ZONED PRECINCTS ACROSS MOORABOOL**



Source: SGS Economics and Planning; adapted from ABS ANZSIC detailed classifications

FIGURE 33 PRECINCT SUMMARY

| Code | Precinct Name | Zone | Largest employing industries | Total Precinct Area (ha) | Vacant site area (sqm) | Vacancy rate | Vacant + Agricultural | Equivalent FT Employment |
|--------------|-----------------------|-----------|--|--------------------------|------------------------|--------------|-----------------------|--------------------------|
| A | Dunstown - Navigators | SUZ2 | Mining, Agriculture | 240.2 | 0.0 | 0% | 64% | 45 |
| B | Lal Lal | SUZ2 | Mining, Agriculture | 64.5 | 0.0 | 0% | 45% | 6 |
| C | Ballan | IN2Z | Manufacturing, Administrative/support services | 19.5 | 3.4 | 17% | 17% | 106 |
| D | Myrnion | SUZ2 | Mining, Agriculture | 157.3 | 0.0 | 0% | 87% | 10 |
| E | Darley - Coimadai | SUZ2 | Mining, Agriculture | 721.1 | 0.0 | 0% | 44% | 99 |
| F | Merrimu | SUZ2 | Mining, Agriculture | 32.2 | 0.0 | 0% | 32% | 12 |
| G | Maddingley 1 | IN2Z | Transport, postal and warehousing, Manufacturing | 7.6 | 0.4 | 5% | 5% | 240 |
| H | Maddingley 2 | IN2Z | Manufacturing, Other services ² | 33.3 | 7.5 | 22% | 49% | 204 |
| I | Maddingley 3 | SUZ1 | Agriculture, Mining | 710.3 | 2.0 | 0% | 70% | 82 |
| J | Maddingley 4 | IN1Z/IN2Z | Manufacturing, Retail | 169.0 | 39.9 | 24% | 53% | 91 |
| K | Rowsley 1 | SUZ2 | Mining | 113.5 | 75.2 | 66% | 66% | 2 |
| L | Rowsley 2 | SUZ2 | Mining | 184.8 | 111.4 | 60% | 60% | 2 |
| M | Rowsley 3 | SUZ1 | Mining | 37.6 | 0.0 | 0% | 0% | 2 |
| N | Parwan | IN1Z | Agriculture | 116.7 | 0.0 | 0% | 100% | 2 |
| Total | | | Manufacturing, Mining | 2,607.6 | 239.8 | 24% | | 903 |

Source: SGS land audit & survey data

² Mainly auto repairs

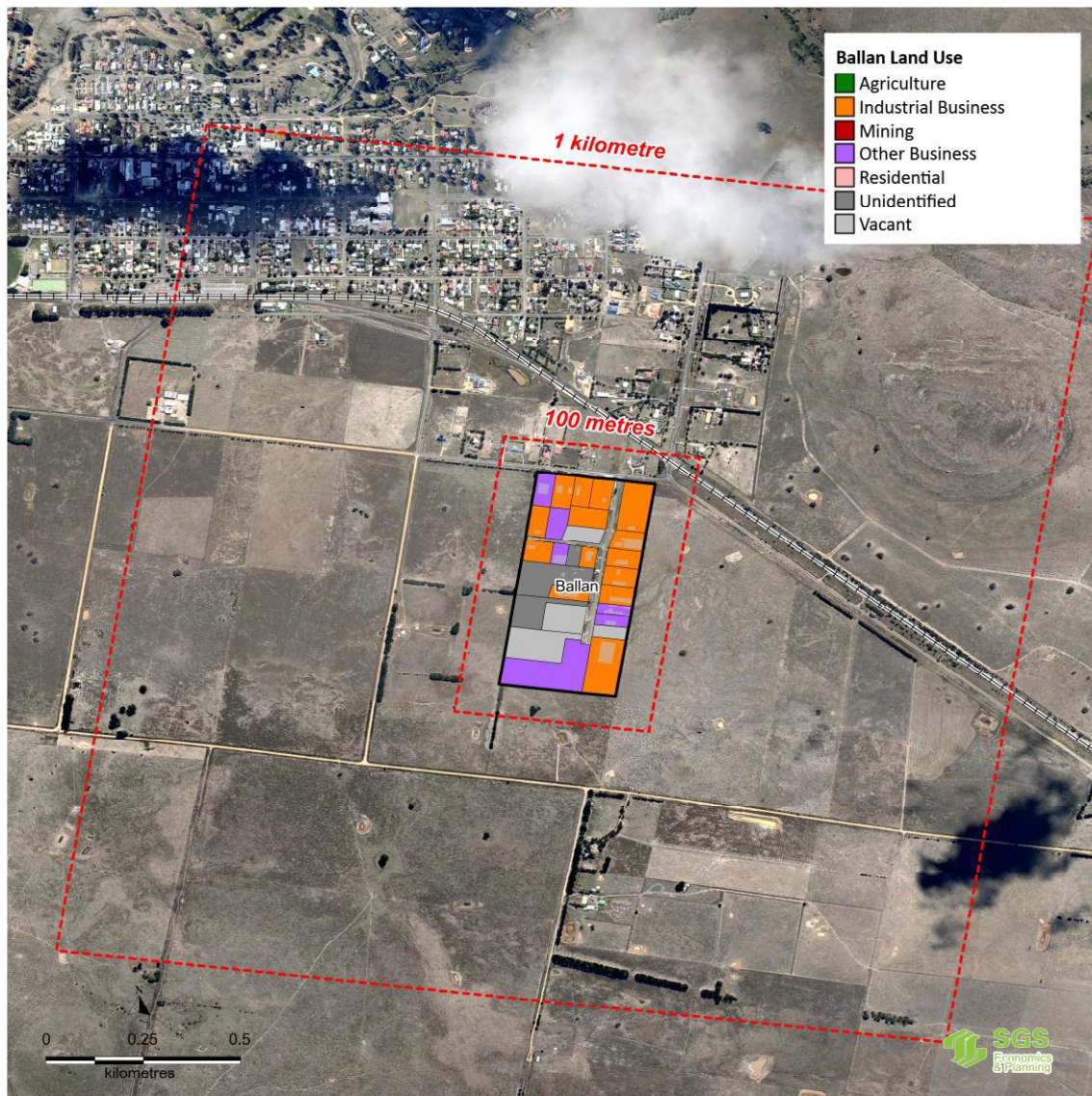
Precinct C – Ballan

FIGURE 34 LAND USES – BALLAN INDUSTRIAL PRECINCT



Source: SGS Fieldwork 2014

FIGURE 35 BALLAN – SURROUNDING CONTEXT



Ballan was found to be a successful industrial precinct possessing a relatively diverse mix of business activities including Manufacturing, Transport and Service companies.

Approximately 106 jobs are provided in the precinct and employment numbers have remained relatively stable over the past two years. Most business owners expect to grow their businesses in the future, and a quarter of those surveyed had plans for redevelopment and expansion. 71% owned, rather than leased their land.

The average year of establishment for these businesses was 2007, with most businesses relocating from elsewhere in Moorabool, Melton, Bacchus Marsh and Laverton.

Business owners identified large lot sizes as the major competitive advantage of industrial land in this precinct. Prominent disadvantages in the location of the precinct for business activities were the distance from the main street or centre of Ballan and the lack of a postal service.

There was a vacancy rate of 17% reported for the precinct.

Note that there are some limitations on this precinct in terms of buffer zones, given there are dwellings within a one kilometre radius (Figure 35). This results in a relative low score on separation buffers.

Figures 37 to 39 summarise the suitability analyses conducted for the three key industries which the precinct could potentially target. The suitability weighting and adequacy scores are explained in Figure 36.

FIGURE 36 RANKINGS FOR PRECINCT SUITABILITY

| Weighting | Number | Adequacy | Number |
|----------------------|--------|----------|--------|
| Very significant | 3 | High | 3 |
| Somewhat significant | 2 | Moderate | 2 |
| Less significant | 1 | Low | 1 |

Weighting * Adequacy = Score

Source: SGS

FIGURE 37 BALLAN – MANUFACTURING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---------------------------|-----------|----------|---------------------|
| Medium to large sites | 3 | 3 | 9 |
| Flat land | 2 | 3 | 6 |
| Large separation buffers | 3 | 1 | 3 |
| Provision of utilities | 2 | 2 | 4 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Land Requirement | | | 46/54 or 85% |

| Location/Access | Weighting | Adequacy | Score |
|--|-----------|----------|---------------------|
| B-double access | 2 | 3 | 6 |
| Proximity to freight route | 2 | 2 | 4 |
| Proximity to container port, rail terminal | 2 | 1 | 2 |
| Access to supply chain | 3 | 1 | 3 |
| Access to labour | 2 | 1 | 2 |
| Land Requirement | | | 17/33 or 52% |

| | |
|--------------|---------------------|
| Total | 63/87 or 72% |
|--------------|---------------------|

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 38 BALLAN – TRANSPORT & WAREHOUSING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---|-----------|----------|-------------------------|
| Large sites | 3 | 3 | 9 |
| Flat land | 2 | 3 | 6 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Large separation buffers | 1 | 2 | 2 |
| Land Requirement | | | 41/42 or 98% |
| Location/Access | Weighting | Adequacy | Score |
| B-double access | 3 | 2 | 6 |
| Access to key freight routes | 3 | 2 | 6 |
| Direct access to ports/rail/intermodal hub | 3 | 1 | 3 |
| Access to supply chain | 3 | 1 | 3 |
| Access to labour | 2 | 1 | 2 |
| Land Requirement | | | 20/42 or 48% |
| Total | | | 61/84 or 73% |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 39 BALLAN - LOCAL SERVICE INDUSTRY SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|----------------------------------|-----------|----------|--------------|
| Competitively priced land | 3 | 3 | 9 |
| Buffers | 1 | 2 | 2 |
| Light industry/commercial zoning | 3 | 3 | 9 |
| Land Requirement | | | 20/21 or 95% |
| Location/Access | Weighting | Adequacy | Score |
| Central to Customers | 3 | 2 | 6 |
| Access to supply chain | 2 | 2 | 4 |
| Access to Freeways/Arterials | 1 | 1 | 1 |
| Land Requirement | | | 11/18 or 61% |
| Total | | | 31/39 or 79% |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

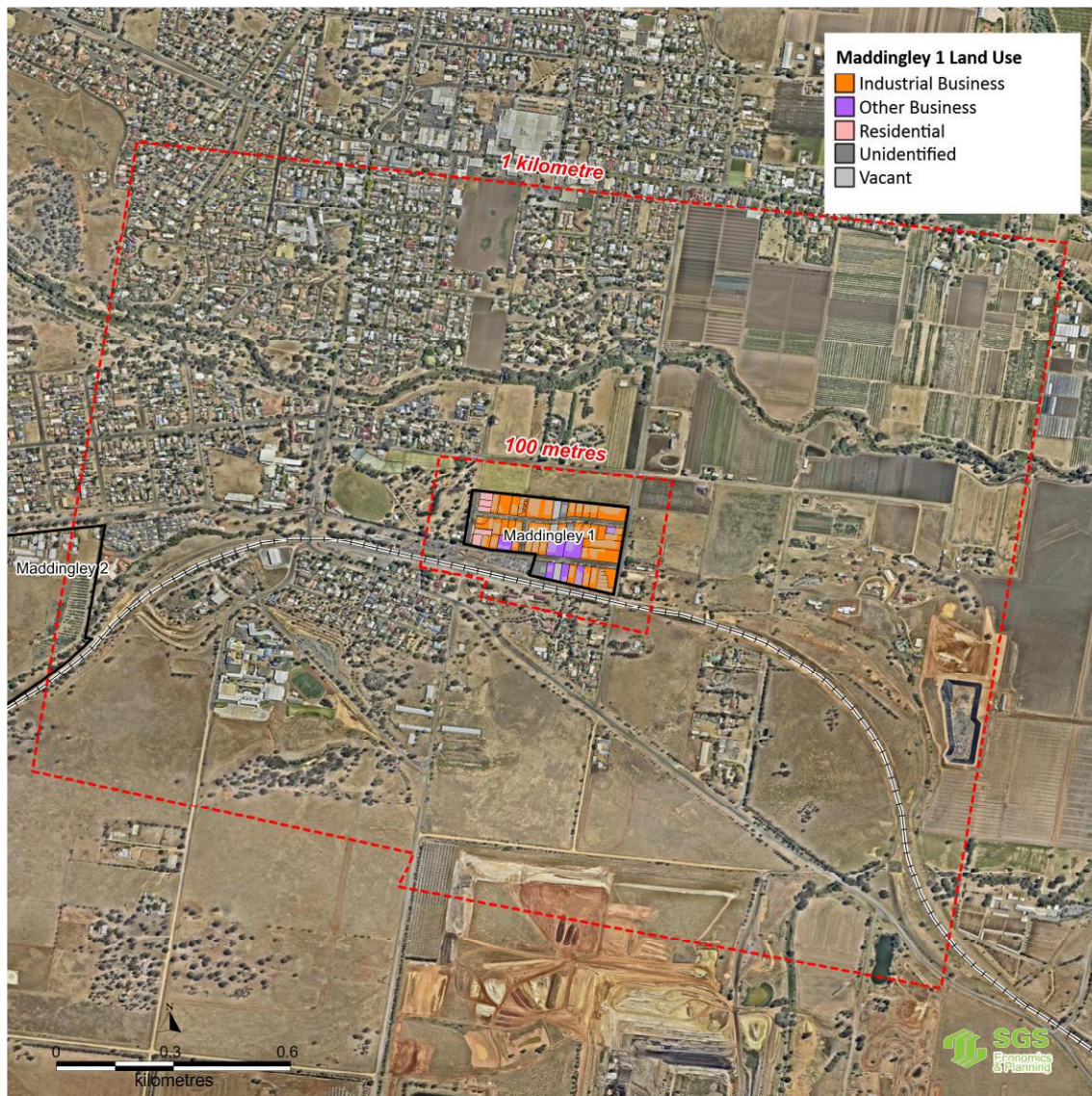
Precinct G – Maddingley 1

FIGURE 40 LAND USES – MADDINGLEY 1 INDUSTRIAL PRECINCT



Source: SGS Fieldwork 2014

FIGURE 41 MADDINGLEY 1 – SURROUNDING CONTEXT



This is the northernmost of the four precincts analysed in Maddingley. As expected, there were few vacant sites in this precinct, with 240 jobs found in this location.

Manufacturing and Other Services (predominantly vehicle repairs and services) were the most significant business activities respectively. Note that the high levels of service industry activities are largely due to the precinct's proximity to the residential core of Bacchus Marsh.

Several businesses have relocated to this precinct in order to benefit from the greater lot sizes on offer. Proximity to home, access to customers and price were also prominent factors of attraction to the precinct. Disadvantages that were cited during the consultation process included distance (both from Melbourne and from the town centre) and perceived poor road infrastructure.

50% of business owners expect their businesses to grow, 44% expect no change, and 6% expect a decline. 33% had plans to relocate, either to be closer to the main street or to other offices, or to a site with larger lot size.

This precinct should expect reasonably high levels of demand – there was a vacancy rate of only 3% reported for the precinct.

Note that historically, this precinct has been prone to flooding. It is difficult to generalise about the impact of flooding on industrial activities, as the impacts are highly unique to individual businesses. In addition, the impact itself is usually of an operational nature that should be managed on a case by case basis.

At the time of the land audit five lots on the western end of this precinct were found to possess dwellings. As a result, the western half of this precinct possesses inadequate buffer zones for some manufacturing businesses. Service industry and freight should not be significantly impacted by the presence of these dwellings.

The greatest concern however, is that the majority of this precinct essentially fails the buffer zone test for manufacturing (see Section 2.1 for detailed discussion of the issue at a policy level). The exception is the western end of precinct – although even those areas (being 100 to 200metres from sensitive uses) would only be able to accommodate some select types of low impact manufacturing (see Figure 41 for satellite image).

Whilst existing use rights apply, it is unlikely that many new manufacturing businesses will be able to establish in this precinct, as all manufacturing activities need to be located at least 100 metres away from sensitive land uses.

Figures 42 to 44 summarise the suitability analyses conducted for the three key industries which the precinct could potentially target.

FIGURE 42 MADDINGLEY 1 – MANUFACTURING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|--|-----------|----------|--------------|
| Medium to large sites | 3 | 3 | 9 |
| Flat land | 2 | 3 | 6 |
| Large separation buffers | 3 | 0 | 0 |
| Provision of utilities | 2 | 3 | 6 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Land Requirement | | | Failed |
| Location/Access | Weighting | Adequacy | Score |
| B-double access | 2 | 3 | 6 |
| Proximity to freight route | 2 | 2 | 4 |
| Proximity to container port, rail terminal | 2 | 1 | 2 |
| Access to supply chain | 3 | 2 | 6 |
| Access to labour | 2 | 2 | 4 |
| Land Requirement | | | 22/33 or 67% |
| Total | | | Failed |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 43 MADDINGLEY 1 – TRANSPORT & WAREHOUSING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---------------------------|-----------|----------|-------------------------|
| Large sites | 3 | 3 | 9 |
| Flat land | 2 | 3 | 6 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Large separation buffers | 1 | 2 | 2 |
| Land Requirement | | | 41/42 or 98% |

| Location/Access | Weighting | Adequacy | Score |
|---|-----------|----------|-------------------------|
| B-double access | 3 | 2 | 6 |
| Access to key freight routes | 3 | 2 | 6 |
| Direct access to ports/rail/intermodal hub | 3 | 1 | 3 |
| Access to supply chain | 3 | 2 | 6 |
| Access to labour | 2 | 2 | 4 |
| Land Requirement | | | 25/42 or 60% |

| | |
|--------------|----------------------|
| Total | 66/84 79% |
|--------------|----------------------|

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

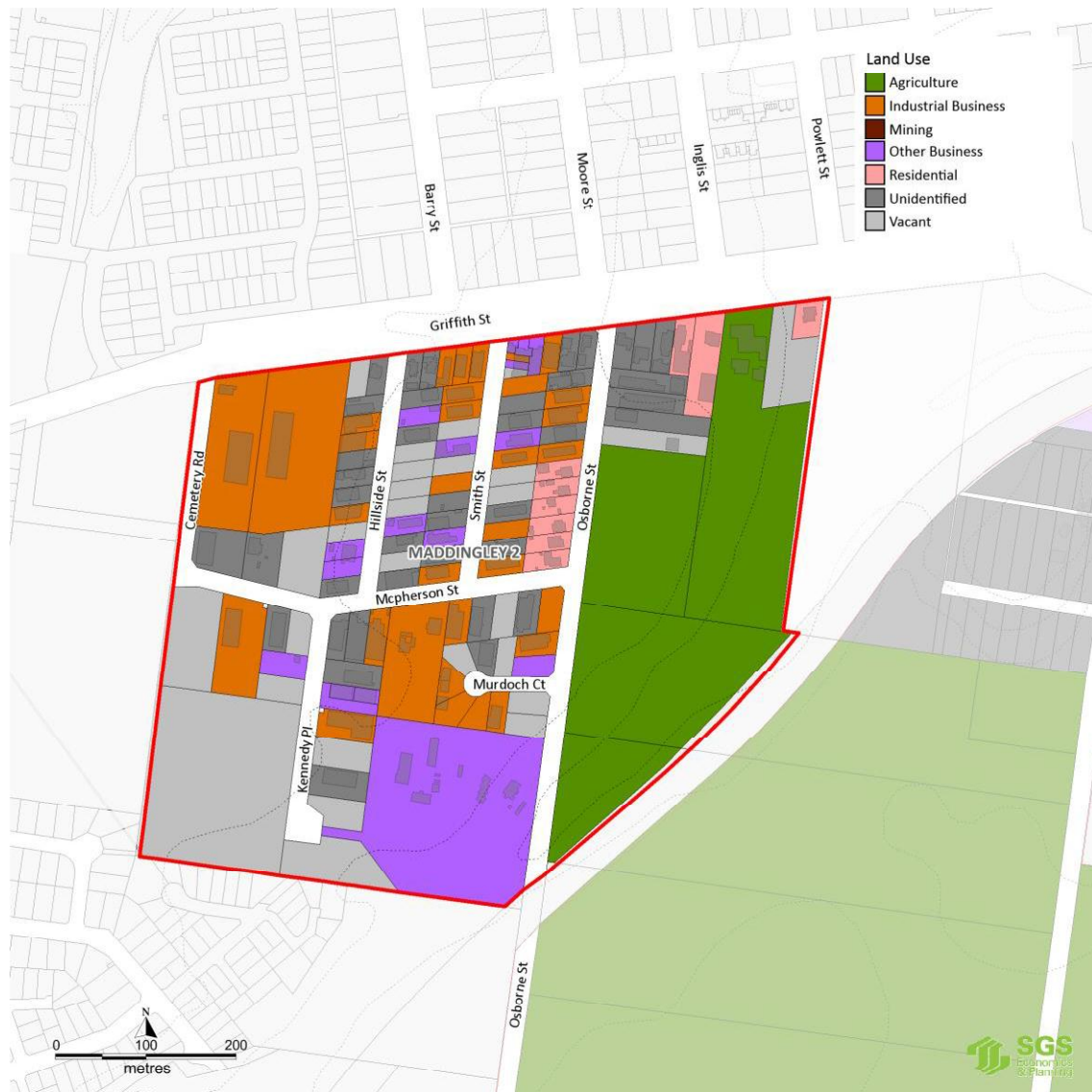
FIGURE 44 MADDINGLEY 1 - LOCAL SERVICE INDUSTRY SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|----------------------------------|-----------|----------|--------------|
| Competitively priced land | 3 | 3 | 9 |
| Buffers | 1 | 2 | 2 |
| Light industry/commercial zoning | 3 | 3 | 9 |
| Land Requirement | | | 20/21 or 95% |
| Location/Access | Weighting | Adequacy | Score |
| Central to Customers | 3 | 3 | 9 |
| Access to supply chain | 2 | 2 | 4 |
| Access to Freeways/Arterials | 1 | 2 | 2 |
| Land Requirement | | | 15/18 or 83% |
| Total | | | 35/39 90% |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

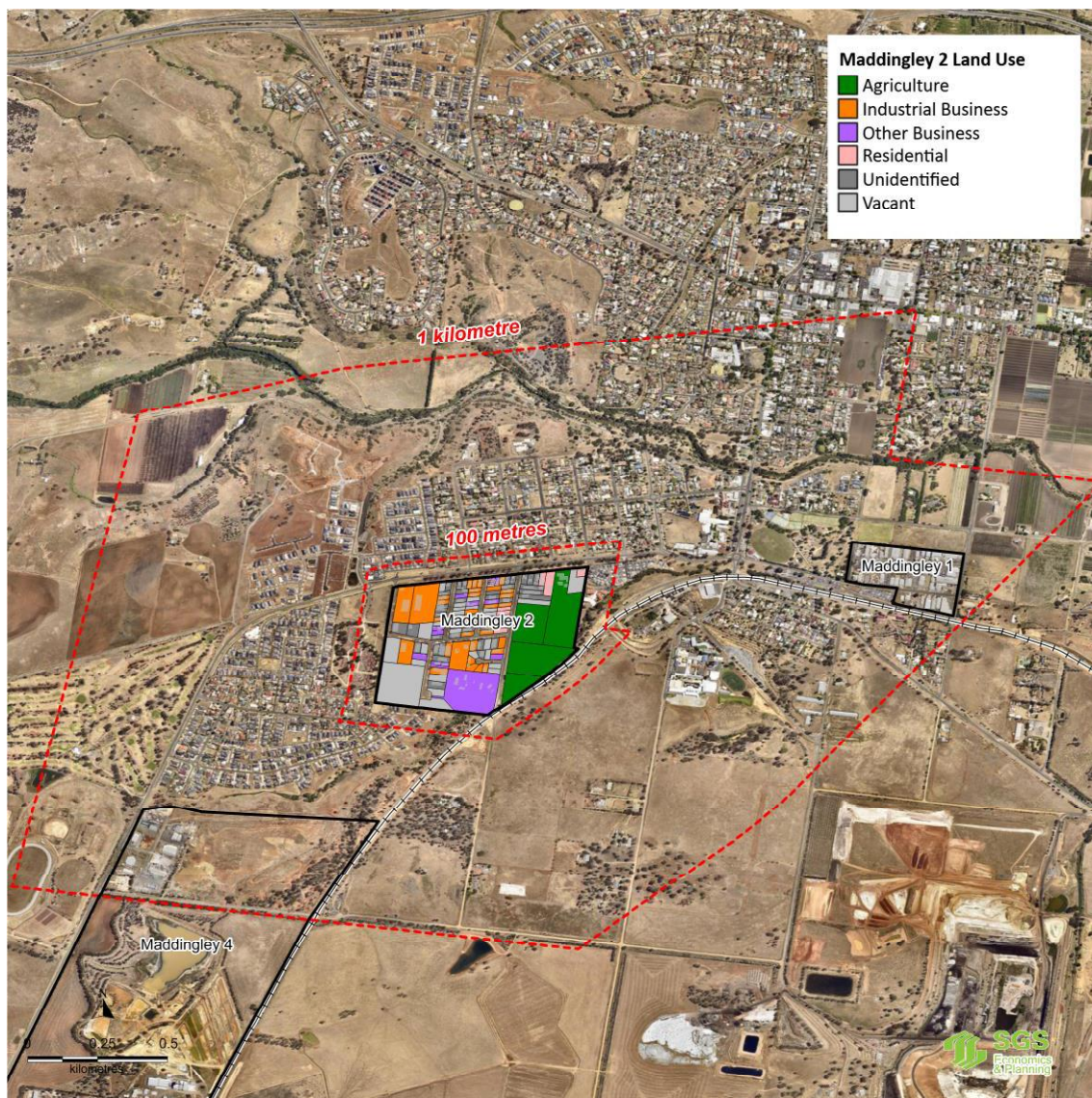
Precinct H – Maddingley 2

FIGURE 45 LAND USES – MADDINGLEY 2 INDUSTRIAL PRECINCT



Source: SGS Fieldwork 2014

FIGURE 46 MADDINGLEY 2 – SURROUNDING CONTEXT



This is another precinct located within close proximity to the Bacchus Marsh township. Once again service industry is highly significant, along with some Manufacturing activities.

The median year of establishment for businesses in this precinct is 2010. Several businesses are new start-ups in the precinct, with others having relocated from a diverse range of other areas including Darley, Gisborne, Sunshine, Bacchus Marsh and other industrial precincts in Maddingley. Size of lots and buildings, and proximity to home were the most important factors in the locational choice of businesses in this precinct. Traffic and road infrastructure were identified as the most significant disadvantages in terms of business operations in the precinct.

Approximately 204 jobs are provided in the precinct, and employment levels have remained relatively stable over the past couple of years. Most business owners surveyed are planning for growth or expansion.

Note that the agricultural sites appear to be situated on a slope – and this may discourage some manufacturing and transport businesses from establishing onsite.

The greatest concern however, is that the majority of this precinct essentially fails the buffer zone test for manufacturing (see Section 2.1 for detailed discussion of the issue at a policy level). The exception

is the south-western corner of precinct – although even those areas (being 100 to 300metres from sensitive uses) would only be able to accommodate some select types of low impact manufacturing

Whilst existing use rights apply, it is unlikely that many new manufacturing businesses will be able to establish in this precinct, as all manufacturing activities need to be located at least 100 metres away from sensitive land uses.

Figures 47 to 49 summarise the suitability analyses conducted for the three key industries which the precinct could potentially target.

FIGURE 47 MADDINGLEY 2 – MANUFACTURING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|--|-----------|----------|--------------|
| Medium to large sites | 3 | 3 | 9 |
| Flat land | 2 | 2 | 4 |
| Large separation buffers | 3 | 0 | Failed |
| Provision of utilities | 2 | 3 | 6 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Land Requirement | | | Failed |
| Location/Access | Weighting | Adequacy | Score |
| B-double access | 2 | 3 | 6 |
| Proximity to freight route | 2 | 2 | 4 |
| Proximity to container port, rail terminal | 2 | 1 | 2 |
| Access to supply chain | 3 | 2 | 6 |
| Access to labour | 2 | 2 | 4 |
| Land Requirement | | | 22/33 or 67% |
| Total | | | Failed |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 48 MADDINGLEY 2 – TRANSPORT & WAREHOUSING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---------------------------|-----------|----------|-------------------------|
| Large sites | 3 | 3 | 9 |
| Flat land | 2 | 2 | 4 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Large separation buffers | 1 | 2 | 2 |
| Land Requirement | | | 39/42 or 93% |

| Location/Access | Weighting | Adequacy | Score |
|---|-----------|----------|-------------------------|
| B-double access | 3 | 2 | 6 |
| Access to key freight routes | 3 | 2 | 6 |
| Direct access to ports/rail/intermodal hub | 3 | 1 | 3 |
| Access to supply chain | 3 | 2 | 6 |
| Access to labour | 2 | 2 | 4 |
| Land Requirement | | | 25/42 or 60% |

| | |
|--------------|----------------------|
| Total | 64/84 76% |
|--------------|----------------------|

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

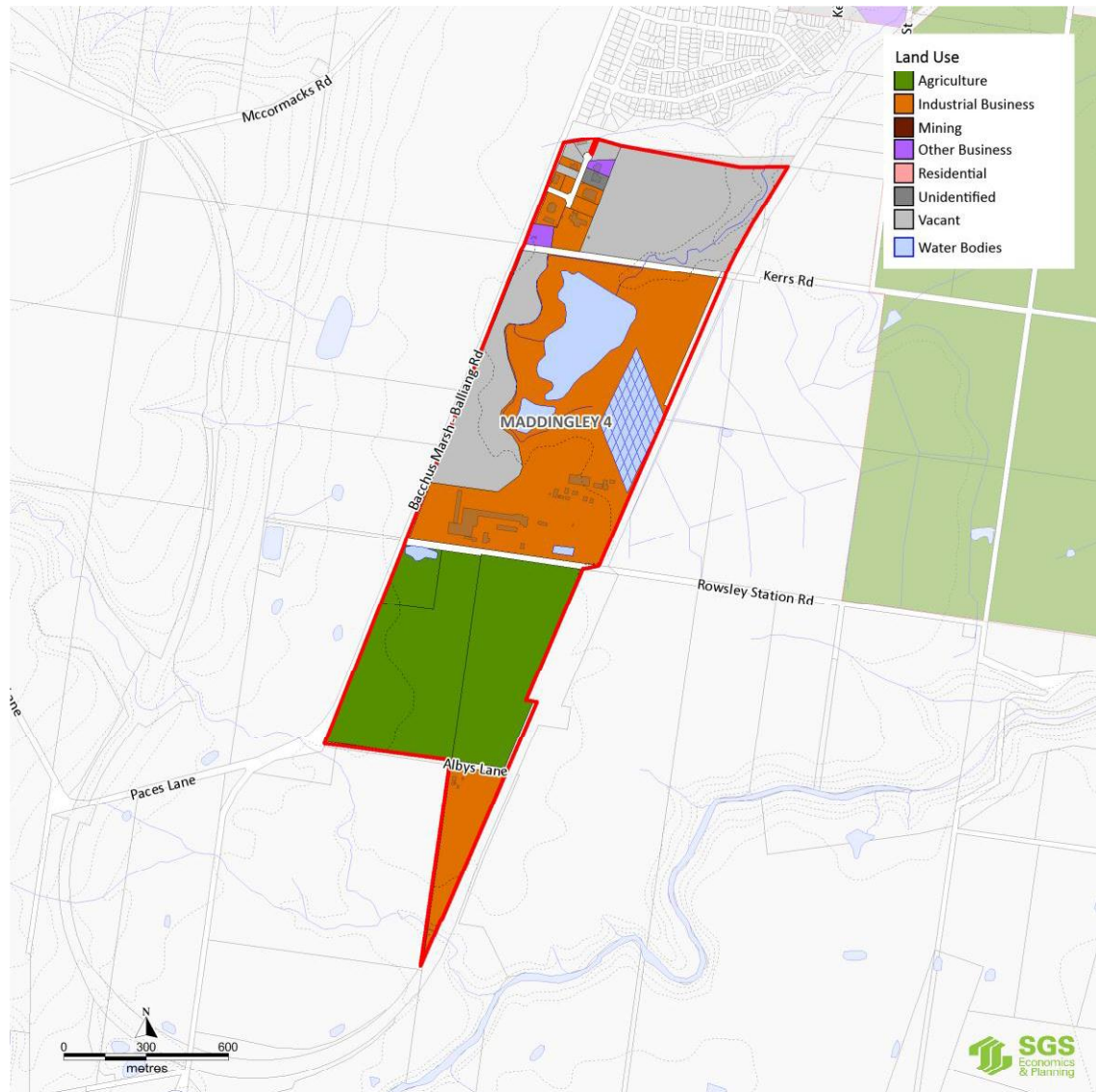
FIGURE 49 MADDINGLEY 2 - LOCAL SERVICE INDUSTRY SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|----------------------------------|-----------|----------|-----------------|
| Competitively priced land | 3 | 3 | 9 |
| Buffers | 1 | 2 | 2 |
| Light industry/commercial zoning | 3 | 3 | 9 |
| Land Requirement | | | 20/21 or 95% |
| Location/Access | Weighting | Adequacy | Score |
| Central to Customers | 3 | 3 | 9 |
| Access to supply chain | 2 | 2 | 4 |
| Access to Freeways/Arterials | 1 | 2 | 2 |
| Land Requirement | | | 15/18 or 83% |
| Total | | | 35/39 90% |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

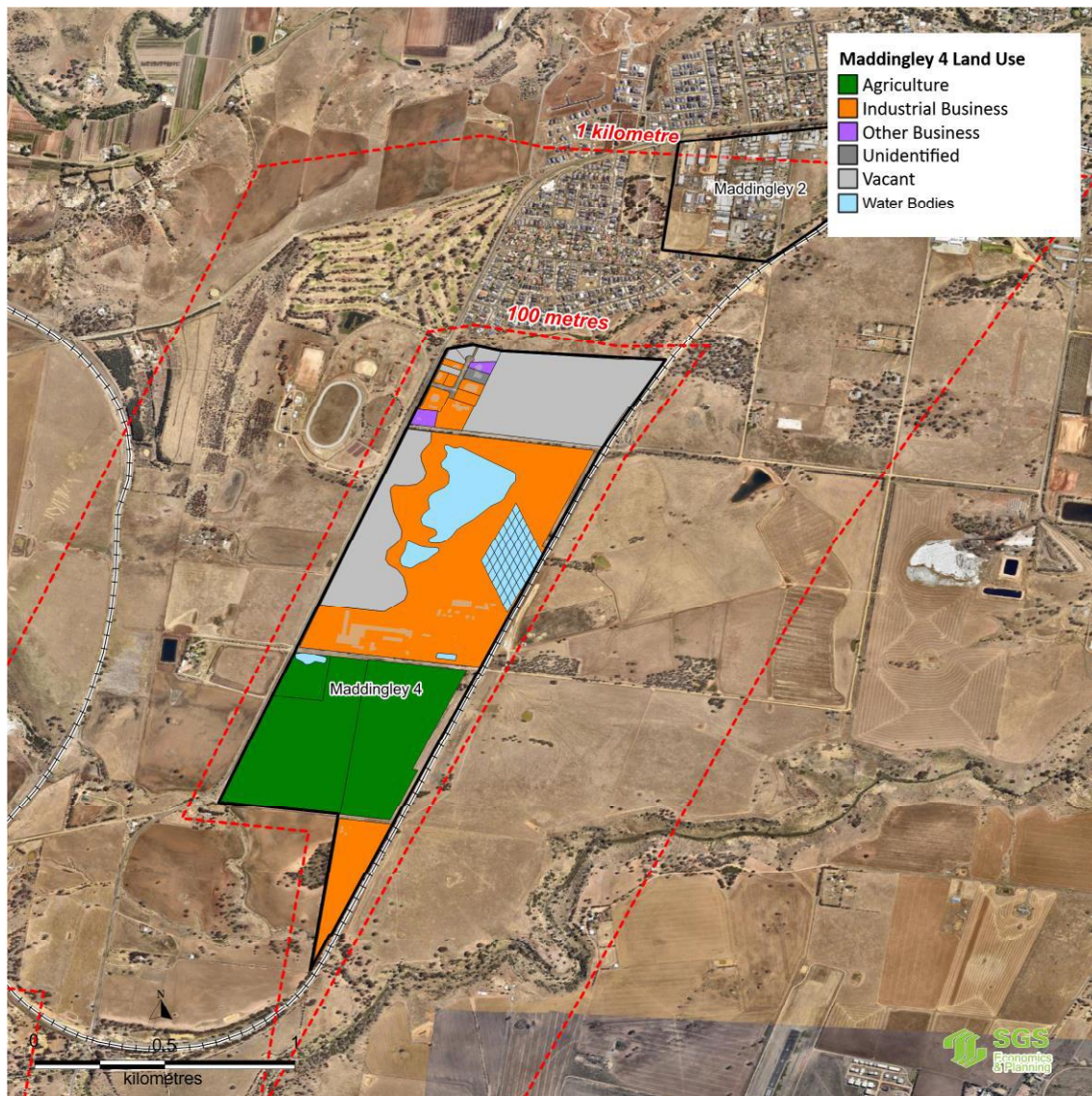
Precinct J – Maddingley 4

FIGURE 50 LAND USES – MADDINGLEY 4 INDUSTRIAL PRECINCT



Source: SGS Fieldwork 2014

FIGURE 51 MADDINGLEY 4 – SURROUNDING CONTEXT



The fourth precinct in Maddingley accommodates 91 jobs, with a diverse range of Industrial activities including manufacturing, power generation, warehousing, retail trade and wholesale trade. Most surveyed business owners sought to grow their businesses in coming years.

Attractors to the precinct are its proximity to Bacchus Marsh, availability of large lots and freeway access. Weaknesses in the location of the precinct that were identified during the consultation process were the lack of postal and garbage services and road access, including access for b-double trucks on Grant Street.

Two of the three completed land owner surveys reported interest in development or redevelopment of their relevant sites. Development plans include the introduction of sensitive uses to the area, a factor which was raised as a concern by a significant business owner during the consultation process. Issues of urban encroachment may need to be managed carefully to avoid land use conflict in the precinct in the future.

Indeed, this is the only existing industrial precinct near the western end of the Shire is possesses some reasonable buffer distances from sensitive uses. Nonetheless, the buffer distances are still not ideal, as almost half the precinct is still within 1km of sensitive uses.

The JBD Industrial Park is a significant industrial site within the precinct, containing 9 individual businesses. Owners of the site intend to continue subdividing and expanding the Park to create a major industrial complex.

Figures 52 to 54 summarise the suitability analyses conducted for the three key industries which the precinct could potentially target.

FIGURE 52 MADDINGLEY 4 – MANUFACTURING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---------------------------|-----------|----------|---------------------|
| Medium to large sites | 3 | 3 | 9 |
| Flat land | 2 | 2 | 4 |
| Large separation buffers | 3 | 2 | 6 |
| Provision of utilities | 2 | 2 | 4 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Land Requirement | | | 47/54 or 87% |

| Location/Access | Weighting | Adequacy | Score |
|--|-----------|----------|---------------------|
| B-double access | 2 | 1 | 2 |
| Proximity to freight route | 2 | 1 | 2 |
| Proximity to container port, rail terminal | 2 | 1 | 2 |
| Access to supply chain | 3 | 2 | 6 |
| Access to labour | 2 | 2 | 4 |
| Land Requirement | | | 16/33 or 48% |

| | |
|--------------|---------------------|
| Total | 63/87 or 72% |
|--------------|---------------------|

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 53 MADDINGLEY 4 – TRANSPORT & WAREHOUSING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---------------------------|-----------|----------|---------------------|
| Large sites | 3 | 3 | 9 |
| Flat land | 2 | 2 | 4 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Large separation buffers | 1 | 2 | 2 |
| Land Requirement | | | 39/42 or 93% |

| Location/Access | Weighting | Adequacy | Score |
|--|-----------|----------|---------------------|
| B-double access | 3 | 1 | 3 |
| Access to key freight routes | 3 | 1 | 3 |
| Direct access to ports/rail/intermodal hub | 3 | 1 | 3 |
| Access to supply chain | 3 | 2 | 6 |
| Access to labour | 2 | 2 | 4 |
| Land Requirement | | | 19/42 or 45% |

| | |
|--------------|---------------------|
| Total | 58/84 or 69% |
|--------------|---------------------|

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 54 MADDINGLEY 4 - LOCAL SERVICE INDUSTRY SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|----------------------------------|-----------|----------|--------------|
| Competitively priced land | 3 | 3 | 9 |
| Buffers | 1 | 2 | 2 |
| Light industry/commercial zoning | 3 | 3 | 9 |
| Land Requirement | | | 20/21 or 95% |
| Location/Access | Weighting | Adequacy | Score |
| Central to Customers | 3 | 2 | 6 |
| Access to supply chain | 2 | 2 | 4 |
| Access to Freeways/Arterials | 1 | 1 | 1 |
| Land Requirement | | | 11/18 or 61% |
| Total | | | 31/39 or 79% |

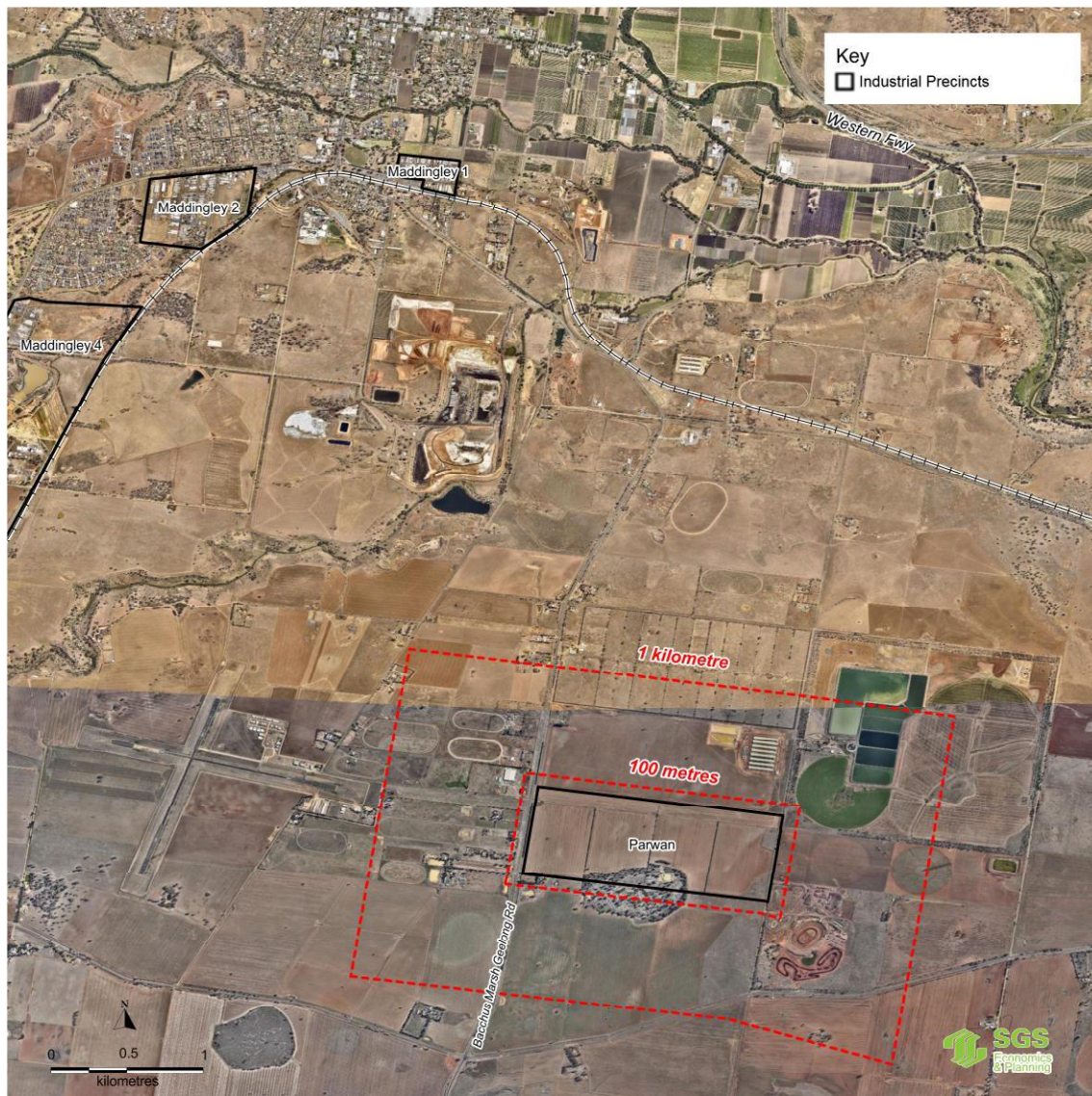
Note: This is not a comprehensive list. It only highlights relevant land use considerations.

Precinct N – Parwan

FIGURE 55 LAND USES – PARWAN INDUSTRIAL PRECINCT



FIGURE 56 PARWAN – SURROUNDING CONTEXT



Parwan is presently an agricultural precinct with no industrial activities found on the one site. There are a range of uses in the wider Parwan area but none would be defined as industrial. There are some plans for industrial activity in the future.

We have nonetheless undertaken a set of suitability analyses to determine the likelihood of future industrial expansion onto the precinct.

Figures 57 to 59 summarise the suitability analyses conducted for the three key industries which the precinct could potentially target.

FIGURE 57 PARWAN – MANUFACTURING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|--|-----------|----------|--------------|
| Medium to large sites | 3 | 3 | 9 |
| Flat land | 2 | 3 | 6 |
| Large separation buffers | 3 | 3 | 9 |
| Provision of utilities | 2 | 1 | 2 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Land Requirement | | | 50/54 or 93% |
| Location/Access | Weighting | Adequacy | Score |
| B-double access | 2 | 2 | 2 |
| Proximity to freight route | 2 | 1 | 2 |
| Proximity to container port, rail terminal | 2 | 1 | 2 |
| Access to supply chain | 3 | 1 | 3 |
| Access to labour | 2 | 1 | 2 |
| Land Requirement | | | 11/33 or 33% |
| Total | | | 61/87 or 69% |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 58 PARWAN – TRANSPORT & WAREHOUSING SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|---------------------------|-----------|----------|-------------------------|
| Large sites | 3 | 3 | 9 |
| Flat land | 2 | 2 | 4 |
| Industry zoning | 3 | 3 | 9 |
| Competitively priced land | 3 | 3 | 9 |
| Ready site access/egress | 2 | 3 | 6 |
| Large separation buffers | 1 | 3 | 3 |
| Land Requirement | | | 40/42 or 95% |

| Location/Access | Weighting | Adequacy | Score |
|---|-----------|----------|-------------------------|
| B-double access | 3 | 2 | 6 |
| Access to key freight routes | 3 | 1 | 3 |
| Direct access to ports/rail/intermodal hub | 3 | 1 | 3 |
| Access to supply chain | 3 | 1 | 3 |
| Access to labour | 2 | 1 | 2 |
| Land Requirement | | | 17/42 or 40% |

| | |
|--------------|-------------------------|
| Total | 57/84 or 68% |
|--------------|-------------------------|

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

FIGURE 59 PARWAN - LOCAL SERVICE INDUSTRY SUITABILITY

| Land Requirement | Weighting | Adequacy | Score |
|----------------------------------|-----------|----------|---------------|
| Competitively priced land | 3 | 3 | 9 |
| Buffers | 1 | 3 | 3 |
| Light industry/commercial zoning | 3 | 3 | 9 |
| Land Requirement | | | 21/21 or 100% |
| Location/Access | Weighting | Adequacy | Score |
| Central to Customers | 3 | 1 | 3 |
| Access to supply chain | 2 | 1 | 2 |
| Access to Freeways/Arterials | 1 | 1 | 1 |
| Land Requirement | | | 6/18 or 33% |
| Total | | | 27/39 or 69% |

Note: This is not a comprehensive list. It only highlights relevant land use considerations.

Summary of existing precincts

Figure 60 below summarises the results of these suitability analyses across all precincts:

FIGURE 60 SUMMARY OF PRECINCT SUITABILITY

| Precinct | Manufacturing | Transport & Warehousing | Local Service Industry |
|--------------|---|-------------------------|------------------------|
| Ballan | 72% | 73% | 79% |
| Maddingley 1 | FAIL due to inadequate separation buffers | 79% | 90% |
| Maddingley 2 | FAIL due to inadequate separation buffers | 76% | 90% |
| Maddingley 4 | 72% | 69% | 79% |
| Parwan | 69% | 68% | 69% |

The analysis shows that whilst most precincts can reasonably accommodate logistics or local service industry activities, two precincts are largely unlikely to attract new manufacturing activity according to the buffer zone regulations outlined under the EPA guidelines (see Section 2.1 for policy implications). Note however, that due to their close proximity to residential catchments, both these precincts are highly suited to local service industry – indeed, they are outcompeting the other precincts for attraction of service industry.

Of the remaining three precincts, only Parwan possesses the optimal buffer distances, with parts of Ballan and Maddingley 4 effectively in a ‘grey area’, where some activities are likely to be permissible whilst others may fail the (buffer) test. This does create some uncertainty for prospective businesses. Note that all three precincts also suffer from a lack of infrastructure provision.

In the case of Ballan and Maddingley 4, the main issue is traffic – Ballan is located a further 20 minutes away from Melbourne (in comparison to Bacchus Marsh), whilst the Maddingley 4 precinct is some distance away from the Western Freeway. Both are natural disadvantages that are difficult to easily rectify.

Whilst Parwan appears to score lowest for manufacturing suitability, many of its current limitations can be addressed more easily than the other precincts. Its major disadvantage lies in a lack of infrastructure. Whilst infrastructure provision/upgrades will no doubt be costly (specifically – the Eastern Bypass, gas and water), they can still be resolved. Industrial land in or near Parwan needs to be as closely located to the Western Freeway as possible – whilst still maintaining relatively low land costs, large sites and large buffer distances (at least one kilometre, preferably two kilometres – as discussed in Section 2.1).

The infrastructure challenge in this location requires a funding mix solution that deals with the road network as well as other types of infrastructure – whilst keeping land relatively affordable for investors.



STRATEGIC DIRECTION



Demand & Supply Alignment

Figure 61 below summarises the results of the industrial land supply and demand analysis in Moorabool in 2011, 2031 and 2051. A vacancy allowance of 20% has been applied to demand estimates to reflect the actual amount of land that would be needed to ensure an efficient industrial land market can operate.

From this it can be seen that Moorabool possesses a considerable amount of future industrial zoned land supply above and beyond its projected employment demand requirements for the next 40 years.

However, this level of supply is not guaranteed to be automatically available. Factors which could contribute to the actual level of supply not meeting the 346 hectares quoted in Figure 53 include:

- Lack of adequate infrastructure support, including electricity, gas, water, sewerage, road and to a lesser extent, rail connections.
- Inability to convert agricultural land to industrial uses.

Of these two factors, the first is likely to be the most significant impact. As the business surveys identified, access to infrastructure and services is critical. And whilst expectations may be lower given the relatively low cost of industrial land in Moorabool, minimum standards still need to be met – not to mention the positive impact that better infrastructure can have on productivity.

A further issue is that most of these lands are not particularly well suited to Manufacturing activities (they are much better suited to Logistics and Service Industry). This is a concern given that we have found Manufacturing to be generally a more significant employer than Logistics or Service Industry in Moorabool. The issue is discussed in more detail in Section 7.2.

FIGURE 61 ESTIMATE OF FUTURE INDUSTRIAL ZONED LAND

| | Demand (ha) | 20% Vacancy Allowance (ha) | Total required industrial land (ha) | Supply (ha) ²²² |
|------|-------------|----------------------------|-------------------------------------|----------------------------|
| 2011 | 117.7 | 23.5 | 141.2 | 346.0 |
| 2031 | 136.8 | 27.4 | 164.1 | 346.0 |
| 2051 | 161.0 | 32.2 | 193.1 | 346.0 |



Land uses & precincts

Manufacturing

Demand for Manufacturing land is unlikely to be significant in the short to medium term. Nonetheless, when significant demand is forthcoming in the longer term (2031 to 2051), the current state of Moorabool's industrial land supply would suggest that the Shire may struggle to accommodate new manufacturing activities. The Maddingley 4 and Ballan industrial precincts should be considered as stop-gap solutions to the problem.

²²² Includes both vacant sites and agricultural sites

However, given that new demand for manufacturing activities is likely to be a longer term prospect, Moorabool should really prepare a more comprehensive strategy for accommodating Manufacturing activities – there is enough time for this to be accomplished. Given that all existing industrial areas in Maddingley (precincts 1, 2 and 4) and Ballan are all somewhat naturally disadvantaged, the optimal solution would be to develop the area around Parwan as an industrial precinct.

From a state-wide industrial land use planning perspective Parwan require significant infrastructure investment. As stated earlier in the report, most lands which are already well serviced by infrastructure are located in close proximity to sensitive uses. As Western Melbourne is set to accommodate significant population growth in the future, even core industrial lands in Melton and Wyndham are likely to become constrained by buffer zone issues. If Victoria is to grow a competitive Manufacturing sector in the long term, infrastructure investment in sites that are relatively isolated from sensitive uses should become a priority.

Any industrial land in Parwan however, will require strong access to the Western Freeway if it is to become regionally competitive. Note that once the Outer Metropolitan Ring Road is constructed, connection to the Western Freeway will provide even greater levels of accessibility. The recommendation here is to locate the industrial precincts as close to Woolpack Road as possible, with upgrades around the Eastern Bypass and the Freeway Interchange likely to become essential projects.

Note that as Manufacturing businesses tend to benefit from clustering, Council should essentially nominate one precinct, and encourage the growth of a manufacturing cluster in the one location. This has the added benefit of containing all negative externalities (such as pollution) to the one area, preventing more widespread impacts on the natural environment around the Shire.

If Parwan was to become the preferred Manufacturing location in the longer term, Council should employ strategies to transition the Maddingley 1, Maddingley 2 and Ballan precincts towards lower impact activities – but only after a comprehensive service plan is adopted for Parwan and funding commitment agreed for this precinct.

If the transition is premature, then businesses may leave the municipality. This may occur indirectly – through scarcity of land, rising rents, or landowners seeking to attract new uses as a result a rezoning that allows for a broader range of uses to be permitted in a precinct. For example, a Commercial 2 Zone will allow for restricted retail to establish in Maddingley. This in turn could ‘price’ some existing manufacturers out of those precincts. If Parwan is not yet established with sufficient infrastructure provisions, some businesses may relocate to another Shire or City.

FIGURE 62 DEMAND AND SUPPLY – MANUFACTURING

| Demand | 2011 | 2031 | 2051 | Short/Medium Term Need | Long Term Need |
|------------------------|------|------|------|------------------------|----------------|
| Demand | 72.5 | 70.3 | 76.2 | - | +3.7ha |
| +20% vacancy allowance | 87.0 | 84.4 | 91.4 | - | +4.4ha |

| Supply | Land Requirements | Location & Access | Total Score | Available Land ²² |
|--------------|-------------------|-------------------|-------------|------------------------------|
| Maddingley 1 | FAILED | 67% | FAILED | 0.4ha |
| Maddingley 2 | FAILED | 67% | FAILED | 16.3ha |
| Ballan | 92% | 52% | 76% | 3.4ha |
| Maddingley 4 | 88% | 48% | 73% | 90.0ha |

²² Vacant plus agricultural land

| | | | | |
|----------------------|-----|-----|-----|---------|
| Parwan ²² | 92% | 33% | 69% | 116.7ha |
|----------------------|-----|-----|-----|---------|

Transport & Warehousing

Demand for Transport and Warehousing land will gradually increase in the Shire. Maddingley precincts 1 and 2 will be the most sought after as they possess better transport connections than other precincts:

- Ballan, due to its location further west is not as attractive for Transport and Warehousing businesses compared to the precincts closer to Bacchus Marsh.
- Maddingley 4 could improve as a Transport and Warehousing precinct if B-double truck access could be improved.
- Parwan will be more attractive to Transport and Warehousing businesses if a manufacturing hub is established closer to the Eastern Bypass and the Western Freeway.

As all precincts possess strong site characteristics, the focus for Council should be on ensuring that accessibility is improved for Transport and Warehousing businesses. In choosing which precincts to improve accessibility for such uses, there is a trade-off.

Transport and Warehousing businesses *usually* function better away from population centres – there is less potential for congestion and amenity impacts. However in the Shire of Moorabool, most major population centres are also located along the major arterials. The implication here is that if Transport and Warehousing businesses are to avoid the congestion and limited B-double truck access along township roads, they would need to find alternative access to the Western Freeway. This could either be somewhat expensive or would necessitate the creation of new Industrial precincts. The former would need to be investigated in traffic study.

The latter (a new industrial precinct) would require significant investment, but along with a manufacturing hub in or around Parwan, would be the best long term option. A similar business transition strategy could also be employed for the Transport and Warehousing businesses.

Such a solution will eventually eliminate the traffic problems that have long plagued Maddingley and Bacchus Marsh – indeed, having a heavy load of trucks routinely pass through the centre of town is should not be considered a sustainable long term solution for the community. Such a problem is only likely to worsen as more Transport and Warehousing businesses locate in Moorabool.

Council should therefore investigate the potential to create a combined manufacturing and transport hub in or around Parwan. As with the manufacturing recommendation, proximity and access to the Western Freeway via the Eastern Bypass will be essential to the success of such a precinct.

FIGURE 63 DEMAND AND SUPPLY – TRANSPORT & WAREHOUSING

| Demand | 2011 | 2031 | 2051 | Short/Medium Term Need | Long Term Need |
|------------------------|------|------|------|------------------------|----------------|
| Demand | 3.2 | 4.7 | 5.5 | +1.5ha | +2.3ha |
| +20% vacancy allowance | 3.8 | 5.6 | 6.6 | +1.8ha | +2.8ha |

| Supply | Land Requirements | Location & Access | Total Score | Available Land |
|--------------|-------------------|-------------------|-------------|----------------|
| Maddingley 1 | 98% | 60% | 79% | 0.4ha |
| Maddingley 2 | 93% | 60% | 76% | 16.3ha |
| Ballan | 98% | 48% | 73% | 3.4ha |

²² In the event of any service plan upgrades to the arterial road network, this situation could change drastically. Council has been assessing this issue for some time so there is a clear aim to upgrade north-south access in the area.

| | | | | |
|--------------|-----|-----|-----|---------|
| Maddingley 4 | 93% | 45% | 69% | 90.0ha |
| Parwan | 95% | 40% | 68% | 116.7ha |

Local service industry

Demand for service industry will increase rapidly in the Shire. The demand is largely driven by population growth, and so the pattern of development is also likely to follow the pattern of residential development in a similar way to restricted retail expansion. All precincts in Maddingley and Ballan should be well suited to local service industry, given their close proximity to population centres in Bacchus Marsh and Ballan respectively. The Parwan distance from population catchments makes it less attractive than other estates within the shire to service industry tenants.

In contrast to Manufacturing activity, Local Service Industries benefit greatly from locating near population centres than clustering in industrial precincts – and there is no mandatory buffer distance requirements. If Council pursues the development of a manufacturing and logistics hub in or around Parwan, this should leave substantial lands vacant in Maddingley for service industries to accommodate²².

FIGURE 64 DEMAND AND SUPPLY – LOCAL SERVICE INDUSTRY

| Demand | 2011 | 2031 | 2051 | Short/Medium Term Need | Long Term Need |
|------------------------|------|------|------|------------------------|----------------|
| Demand | 42.0 | 61.7 | 79.3 | +19.7ha | +37.3ha |
| +20% vacancy allowance | 50.4 | 74.0 | 95.2 | +23.6ha | +44.8ha |

| Supply | Land Requirements | Location & Access | Total Score | Available Land |
|--------------|-------------------|-------------------|-------------|----------------|
| Maddingley 1 | 95% | 83% | 90% | 0.4ha |
| Maddingley 2 | 95% | 83% | 90% | 16.3ha |
| Ballan | 95% | 61% | 79% | 3.4ha |
| Maddingley 4 | 95% | 61% | 79% | 90.0ha |
| Parwan | 100% | 33% | 69% | 116.7ha |

²² Current population projections show that Ballan is unlikely to grow significantly – the majority of projected population growth is likely to occur in Bacchus Marsh, which should drive demand for the vacant land in Maddingley’s industrial precincts.

Implications

Overall supply for industrial land across the Shire of Moorabool is sufficient. By 2051, economic activities in the Shire will require approximately 193 hectares of Industrial zoned land. Presently, the Shire already possesses 346 hectares of Industrial zoned land. However as outlined, there are a number of complexities around the suitability of those lands for Manufacturing and Logistics activities in particular.

Given that demand for those activities (Manufacturing in particular) is likely to be mild in the short to medium term, Council will have the time to reposition the Shire for longer term investment attraction. The longer term plan should focus on Parwan as the new centrepiece of industrial development, with a combined Manufacturing and Logistics cluster likely to be unique to Victoria given:

- Strong access to Melbourne via the Western Freeway (likely to become even greater with the development of the Outer Metropolitan Ring Road (OMR))
- Large buffer distances which many industrial precincts in Metropolitan Melbourne do not possess
- Competitively priced land
- Large lots
- Access to a growing, young labour force in Bacchus Marsh and Melton (either side of Parwan).

Note that by employing a clear and strong vision for a single cluster, Council would send a strong message to the market. This could result in higher levels of demand (or Supplier Induced Demand (SID)) than that forecast in the economic analysis of this strategy document.



FINAL RECOMMENDATIONS



Summary of findings

The Shire of Moorabool is a peri-urban municipality expected to accommodate significant population growth. This population growth will create a large local workforce to support existing and future businesses in the local and regional area.

As older industrial precincts around Metropolitan Melbourne become increasingly displaced by alternative uses, businesses in the manufacturing, transport and warehousing sectors are increasingly seeking out suitable employment precincts with large buffer zones; but still well connected to the Melbourne economy.

The municipality already possesses significant volumes of industrial supply across Bacchus Marsh and Ballan. However, most of these lands are located in close proximity to residential areas – and therefore fail to provide a distinct point of difference from other industrial lands across Western Melbourne. Indeed, some industrial precincts contain residential lots – which according to EPA guidelines and Clause 52.10 of the Moorabool Planning Scheme would essentially prevent any new form of manufacturing from legally establishing in those precincts.

Furthermore, many of these precincts are not well positioned (spatially) in terms of transport and infrastructure. Industrial land in Maddingley in particular, require access through the Bacchus Marsh Township. On the other hand, the industrial precinct in Parwan (only one site currently) is not yet optimally serviced by infrastructure.

The existing provision of industrial land supply is hindering Council's efforts to attract new industrial businesses – particularly those in the Manufacturing sector.






Other findings include:

- The service industry sector is expected to grow significantly, with the existing provision of industrial lands in Ballan and Maddingley ideally suited to accommodate this growth
- Logistics and Warehousing businesses are viable in Moorabool and are expected to grow in the Shire. However they require better access to the Western Freeway – both in terms of location and road connections – than is currently provided

Recommendations

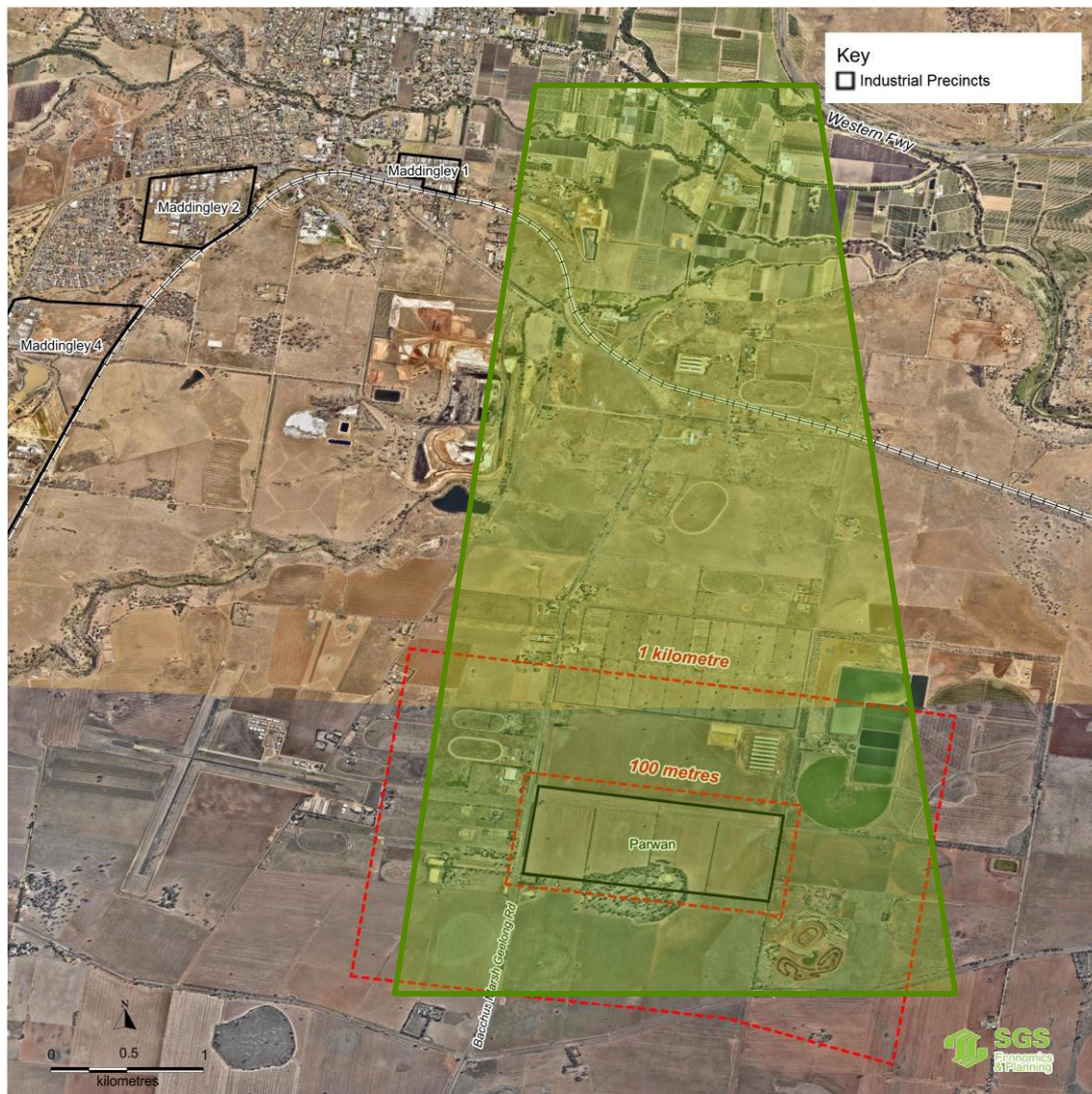
General strategy

As discussed in Section 7, it is recommended that Council's long term priority be to find, service and market a new industrial precinct which can:

-  Provide large buffer zones that attract manufacturing businesses
-  Provide large lots at relatively affordable land prices and rents
-  Potentially be well connected to Melbourne, which requires (a) a relatively Eastern location in the Shire and (b) potential for easy access to the Western Freeway pending investment in transport infrastructure
-  Potentially be well serviced by other types of infrastructure and utilities
-  Possess strong access to a sufficiently large and skilled labour force

The first two will provide crucial points of difference over other industrial lands in Western Melbourne, whilst the other three are essentially points of parity that must be met for manufacturing businesses to be viable anywhere.

FIGURE 65 RECOMMENDED INVESTIGATION AREA FOR POTENTIAL PRECINCT



The green area marked in Figure 65 identifies a future investigation area of what is a large collection of sites. Whilst specific detailed investigation, analysis and selection of so many new industrial sites is a complex task beyond the scope of this report, it is suggested here that this northern area of Parwan is *highly likely* to be well suited to meet the five criteria established above.

The existing industrial zoned site in Parwan possesses some potential – but is approximately four kilometres south of the Western Freeway.

It is recommended that Council also investigate sites closer to the Western Freeway along the corridor between the Western Freeway and the Industrial Zoned site in Parwan. This leaves open the possibility for integration with the railway line at the southern end of the Eastern Bypass.

Such a precinct in this location should accommodate both manufacturing and logistics businesses. The *Parwan Employment Precinct Strategy (CBRE 2015)* also identifies a mix of new agribusiness activities to accommodate in the area.

Ballan and Maddingley

Population serving industries should continue to locate in Ballan and Maddingley. The latter in particular, is likely to benefit greatly from the projected population growth expected in Bacchus Marsh over the next 40 years.

The majority of these core industrial lands are zoned Industrial 2, with some areas zoned Industrial 1. The land audits and demand analyses have facilitated a review of these zoning provisions.

Overall, the Shire's industrial activities do not align well with the primary purposes of the industrial zones. This is largely due to the lack of buffer distances between those industrial precincts and sensitive uses. This study has also found that heavier industries such as waste disposal facilities and steel fabrication factories are sporadically dispersed across Ballan and Maddingley – along with a number of medium impact manufacturing premises found across a majority of the precincts. Most of these businesses were found to be relatively successful, and appear likely to continue their operations in the long term.

Given that Bacchus Marsh in particular is likely to accommodate significant residential development and expansion, it is questionable whether these businesses should remain in those locations. Accounting for the issue of buffer zones, Council could potentially investigate the prospects of relocating some of these businesses further away from sensitive uses – but only if a new industrial precinct is established (see discussion above).

The Maddingley 1 precinct is occupied by a combination of low impact industrial and service industries. The precinct also contains a number of dwellings and non-industrial businesses. Clause 21.07 of the Shire's Local Planning Policy Framework also discusses the broader in and around the precinct as providing opportunities for "planned residential and mixed-use urban development". All of these features combined would suggest that the precinct's current status more closely resembles an Industrial 3 Zoned area (as opposed an Industrial 1 or 2 Zoned area). That said, the potential for residential or mixed use redevelopment of the area requires a broader consideration of the precinct's long term role.

The Maddingley 1 Industrial precinct presents a set of unique opportunities for Council and the local community. The precinct (and surrounding areas) is well located in close proximity to local parks and the Bacchus Marsh railways station. The broader precinct possesses significant development potential. Given the possibilities, Council should carefully consider its options. A strong but flexible plan should be developed before delivery and implementation.

Figure 66 below maps out the key issues which Council needs to consider regarding the potential transitioning of this precinct.

FIGURE 66 NEXT STEPS TO TRANSITION MADDINGLEY 1 PRECINCT

| Approach | Purpose | Actions |
|---|---|---|
| Capture value | Before any key stakeholders are engaged, Council needs to ensure that value uplift from rezoning the land from industrial to mixed use is captured; i.e. value capture mechanisms need to be established before the market is aware of potential increases to land values from future rezonings. | Investigate/scope appropriate value capture mechanisms; Implement value capture mechanisms for the purposes of infrastructure funding; Initially this is most likely to take the form of Section 173 agreements, with DCPs to operate concurrently later. |
| Determine ultimate land use options | <p>Council needs to understand the relative merits of:</p> <ul style="list-style-type: none"> – Optimal market solution – Optimal planning outcome – ‘Satisficing’ between market outcomes and planning outcomes <p>Two or all three of these may align to be the same solution.</p> | <p>Scope the potential land use development options/outcomes;</p> <p>Undertake a financial feasibility analysis to determine and rank the market outcomes of each development option;</p> <p>For financially unfeasible options, determine the nature and extent of government support required^[20];</p> <p>Undertake a net community benefit assessment to determine and rank the planning outcomes of each development option, incorporating the cost of government support for those financially unfeasible options;</p> <p>Determine best ultimate option as well as most likely zoning regulation required to ultimately achieve the outcome.</p> |
| Determine the transition method | The transition from an industrial precinct to a residential or mixed use precinct is not a simple matter. Council will need to consider the planning, infrastructure, economic and environmental aspects of this transition process. | <p>Determine whether a transition of uses will be required. For example, it may be ideal to transition from industrial to commercial to mixed use to fully residential;</p> <p>Determine the planning, infrastructure, economic and environmental constraints and issues which will need to be managed during the transition process. A net community benefit assessment can also be run for transition options;</p> <p>Choose a transition option and determine the timing and implementation.</p> |
| Determine Council’s role in the process | Ultimately, Council can improve the chances of a successful transition by playing various roles. | One option would be for Council to partner with a developer and undertake a demonstration project. The key issue would be to determine the extent of Council’s involvement. |

Other industrial precincts around Ballan and Maddingley should continue to predominantly accommodate service industries – which are expected to service a growing population.

^[20] This is usually only done for options which are likely to generate positive outcomes for the community

The 2001 Moorabool Industrial Areas Strategy recommended a number of rezonings in these precincts from Industrial 2 to Industrial or vice versa. It has been assessed that such rezonings would have a minimal impact on the nature of activities in these precincts, and ultimately do not address the externalities identified in this report (buffers, traffic). It is recommended that Council investigate potential rezonings of Maddingley 1 and Maddingley 2 precincts to either a Commercial 2 or Industrial 3 Zone to facilitate a transition of these precincts away from core industrial uses. Further investigation is required on this matter.

Parwan

The industrial precinct in Parwan is zoned Industrial 1 – but is not currently utilised for industrial purposes. There is also some potential demand for Farming Zoned land surrounding this Industrial zoned precinct to be rezoned to an Industrial zone as well. The assessment in this report has concluded that Industrial activity does not currently exist in this area. However as discussed in Sections 6 and 7 this area possesses significant potential as its prospects are not limited by the presence of sensitive uses.

The larger buffers that this site enjoys from residential areas has resulted in its relative underservicing of infrastructure – a factor for its vacancy at present. The site's location four kilometres from the Western Freeway – a significant distance, means it ranks lower than some other sites for access.

This report concludes that it is relatively inconsequential whether the current Industrial Zoned site should be under an Industrial or Farming Zone. The bigger concern is for the creation of a broader, larger industrial precinct with better access to the Western Freeway. This might involve upgrades to the Freeway interchange and the Eastern Bypass, but consideration should also be given for finding suitable sites further north. Once the broader 'precinct' issue is resolved, a decision can then be reached on the status of the Industrial Zoned site – along with numerous other sites up for consideration.

As mentioned the *Parwan Employment Precinct Strategy (CBRE 2015)* identifies a mix of potentially viable agribusiness activities to accommodate in the area including meat processing, bulk distribution, mushroom production, poultry and hydroponics along with associated co-located industries. Like many of the industrial activities identified in this report, most of these agribusiness activities will require some form of infrastructure investment to be viable, with Natural Gas, water and improved road connections the major requirements.

If implemented, these infrastructure provisions should benefit both agribusiness and industrial activities.

In order to progress development of these activities it is recommended that Council undertake:

- ?? A **Parwan Employment Cluster Governance Model** defining the overarching governance mechanisms, funding responsibilities, revenue generating capacity, liaison with State agencies and anchor tenants/investors for implementation.
- ?? A **Parwan Precinct Structure Plan** which outlines specific zones, overlays and planning scheme policy supporting an Employment Cluster Strategy. This will need to address a broad range of detailed land use issues including co-location, subdivisions and amenity.
- ?? A **Parwan Infrastructure Prioritisation Strategy** which presents a case for the staged provision of infrastructure, outlining the benefits and costs of providing different types of infrastructure across various parts of the precinct. A key feature of this strategy will be to provide a rationale for sequentially introducing new infrastructure over the short, medium and long term.

APPENDIX A – EMPLOYMENT

A key purpose of the surveys was to identify the level of economic activity currently in industrial precincts, with employment figures as a quantitative indicator. Figure 67 below tabulates the level of employment identified. For businesses which were not surveyed, SGS has generated estimates of the number of employees on site using the firm's employment-floorspace model, which has been established through SGS's work across all geographies around Australia and modified with our analysis in Moorabool. These benchmarks are listed overleaf in Figure 68 for various land use categories.

FIGURE 67 EMPLOYMENT BY INDUSTRY

| Industry | # Jobs | % of Jobs |
|---|------------|-------------|
| Manufacturing | 238 | 26% |
| Mining | 159 | 18% |
| Transport, postal and warehousing | 103 | 11% |
| Agriculture | 96 | 11% |
| Other Services | 93 | 10% |
| Construction | 31 | 3% |
| Administrative and support services | 23 | 3% |
| Retail trade | 23 | 3% |
| Professional, scientific and technical services | 21 | 2% |
| Arts and Recreation Services | 12 | 1% |
| Wholesale trade | 7 | 1% |
| Electricity, gas, water and waste services | 4 | 0% |
| <i>Unidentified industrial^[2]</i> | 93 | 10% |
| Total | 904 | 100% |

Source: SGS Economics and Planning

^[2] This category refers to businesses which our surveyors were unable to survey. It was also difficult to determine what type of industrial business was onsite, so it is referred to as an unidentified or miscellaneous/general industrial land use.

FIGURE 68 EMPLOYMENT-FLOORS-SPACE MODEL BENCHMARKS

| Land Use | Floorspace per Job Ratio/Benchmark |
|--|------------------------------------|
| Business / Office Parks | 50 |
| Office | 30 |
| Retail - Big Box | 100 |
| Bulky Goods Retail (incl. Showrooms) | 120 |
| Retail - Main Street | 30 |
| Short-term Accommodation | 25 |
| Dispersed Activities | 40 |
| Special Activities (incl. Creative spaces) | 70 |
| Service Industry | 160 |
| Manufacturing | 185 |
| Freight and Logistics | 58 |
| Urban Services and Utilities | 250 |

Source: SGS Economics and Planning

APPENDIX B - TYPOLOGY OF USES

Industry and agribusiness

Figure 69 below outlines the major types of businesses that are defined as either being 'industrial or 'agribusiness'. Both are further classified by three sub-types. The industrial sub-types are discussed in more detail in this appendix.

FIGURE 69 INDUSTRIAL AND AGRIBUSINESS USES

| Industrial | Agribusiness |
|---|--|
| Manufacturing Meat and dairy products Other food products Beverages, tobacco products Textiles Clothing and footwear Wood and wood products Paper, printing and publishing Petroleum and coal products Chemicals Rubber and plastic products Non-metallic mineral products Basic metals and products Fabricated metal products Transport equipment Other machinery and equipment Miscellaneous manufacturing | Pre-farm gate Aquaculture Cropping (including Broadhectare Irrigation) Dairy Equine Forestry Grazing Horticulture (including Market Gardens & Protected Cropping) Mixed Farming Piggeries Poultry Viticulture |
| Freight Oriented Wholesale trade Transport and storage | Post-farm gate Abattoirs Bulk Commodity Storage Cotton Gins Fats & Oils Processing Facilities Feedlots Livestock Selling Centres Milk Processing Nut Cracking Hulling & Processing Facilities Sugar Mills Timber Mills Wineries |
| Service Industry Construction Repairs | Resources/Energy Renewable Energy Carbon Sequestration |

Industrial systems

Industrial development is not homogeneous. There are different types of industrial land users, with each having particular characteristics and needs. This includes locational needs, buffer needs, lot size needs, infrastructure needs and the like. It is important to 'unpack' and identify different industrial land segments in order to derive a meaningful strategy for industrial development. Supply side positioning can then follow.

The primary industrial land users can be defined as follows.

- **Manufacturing** - This encompasses firms that 'make things'. Firms in this category produce goods in a competitive global market for domestic and export sales. Australian firms in this category are by necessity knowledge and capital intensive. Some firms in this category will use processes that are hazardous or noisy and thus require buffer distances from 'sensitive' uses, including general industrial activities. However, modern manufacturing is largely undertaken in 'hi tech' or modern industrial facilities that are difficult to differentiate from 'business park' activities.
 - Firms in this category will occupy factories, research facilities and offices. In some cases large and offensive industrial premises will be used.
 - Note that an industry sector should not be classified as either 'hi tech' or 'offensive' in a generalised fashion, because it is likely that all industry sectors will have only some firms that fall in both categories. In sectors like textiles for example - which may invoke images of smoke stacks and low-skilled manual labour - there will be a proportion of firms that are in fact hi-technology, wholesaling and/or export oriented. The proportion of hi-tech firms in textiles might not be as high as in sectors like information technology or pharmaceuticals, but the level of sophistication in the sector must not be dismissed.
 - On this basis a mix of environments can be provided to cater for production activities across all sectors.
- **Logistics** - This encompasses firms that 'store, package and transport things'. Firms in this category do not produce goods, but rather act as intermediaries in the movement of goods from production to the end user. Firms in this category are driven by domestic movement of goods in addition to export and import activity.
 - These activities mainly occupy warehouses but could also locate in intermodal transport nodes and shipping container parks.
 - Large sites with high quality transport links are desired by these firms, within regions that have a strong logistics role.
- **Service Industry** - This encompasses firms that 'fix and service things' from an industrial setting. This includes car repairs and trade supplies and related uses that are driven by the size and composition of the regional population and business base.
 - These activities occupy 'factoryettes' and depots. Smaller sites within reach of a market area are key locational considerations.

Other land uses can also utilise industrial land. This includes some forms of retail, business services and utilities. However, for the purpose of this growth area plan, industrial development is defined using the categories above.

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