Rail Futures Institute

CROSS BORDER RAILWAYS BETWEEN SOUTH AUSTRALIA AND VICTORIA OUTLINE BUSINESS CASE Part 1 Glenburnie to Heywood consultation draft 23 Mar 2025

Acknowledgement – The Rail Futures Institute acknowledges the substantial support given to the development of this consultation draft by Regional Development Australia Limestone Coast, the industry associations and private sector organisations who provided advice

Rail Futures Institute is an independent non-partisan group. It was formed in 2013 to advocate in the public interest for cost-effective rail and intermodal solutions for public transport and freight problems based on sound commercial, economic and social reasoning. Rail Futures members include experienced rail professionals, urban planners, engineers and economists.

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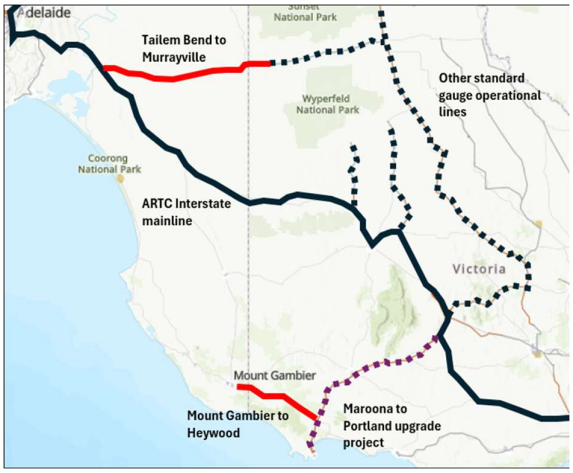
1. Executive Summary – Cross Border Railways

Two railway lines cross the border between South Australia and Victoria near Pinnaroo and Murrayville, and between Mount Gambier and Heywood, both of which have not carried any rail freight and remained broad gauge since the conversion from broad gauge to standard gauge of the Adelaide to Melbourne line in 1995.



Cross Border Rail Lines (Base Map National Freight data Hub)

Prior to 1995 there were cross border rail freight flows and during the closure of the rail line between Tailem Bend and Victoria as part of the gauge standardisation project, Adelaide to Melbourne intermodal freight trains were diverted via this corridor.

With the 1997 sale of Australian National, the assets on the rail line from Tailem Bend to the Victorian Border near Pinnaroo were sold to the private sector, now Aurizon, with the rail corridor transferred to the South Australian Government and leased to the rail asset owner under a 50+15 year lease that will expire in 2062.

All the other corridors and assets are owned by the respective State Governments.

In the late 1990's the rail line from Tailem Bend to Pinnaroo was converted to standard gauge with funding provided by the South Australian Government but train operations ceased in 2015.

In 2020 the railway from Ouyen to Murrayville was converted to standard gauge and upgraded as part of the Victorian and Commonwealth Government's Murray Basin rail standardisation project[1].

In 2024 the Australian Government announced funding for the upgrade of the rail line between Maroona and Portland.

Mode shift has been highlighted by the Australian Government as a key strategy to meet the target of zero emissions by 2050.

Completion of the standardisation and upgrade of these two cross border railways would enable the resumption of rail freight services that link to the ARTC interstate rail network.

On 16 March 2025 Infrastructure SA published the 2025 South Australia's 20 Year Infrastructure Plan which stated:-

"As we aspire to grow our exports and seek economies of scale, there is a need to use the existing rail network and ports more. This includes further investigation on the choice of mode appropriate to the task required and potentially re-vitalising existing rail options that are either no longer being used or have been retired. There are opportunities to re-purpose these retired rail lines into operational freight networks in south eastern South Australia. For example, the rail line at Pinnaroo and further south in the Mount Gambier region. Several entities have expressed interest over the years in re-purposing these old routes, and whilst there are many constraints, continuing to remain open to options that may improve productivity and enable further economic activity is paramount."

[1] Premier of Victoria, Progressing With The Murray Basin Rail Project, July 2022

This is a catalyst for further consideration of the proposal by industry and all three levels of government on both sides of the border.

These projects would involve investment from the private sector, South Australian, Victorian and Federal Governments and consequently will require cross border negotiations.

The recent appointment of a Cross Border Commissioners by the South Australian and Victorian Government's will help facilitate these negotiations.

Glenburnie to Heywood

Following rail gauge standardisation between Adelaide and Melbourne in 1995 three events have occurred which indicate that reinstating rail access has become more economically viable:-

- In 2020 the CSIRO in a report commissioned by Regional Development Australia Limestone Coast[2] (using the CSIRO's TraNSIT dashboard) identified that an intermodal terminal at Glenburnie and reinstatement of the 81 kilometre rail line to Heywood in Victoria appeared to have the highest potential freight cost savings of the options considered, one of which was reinstating the rail line between Mount Gambier and Wolseley.
- The Green Triangle Forest Industries Hub[3] identified significant opportunities to increase the value of the wood product produced in the Green Triangle Region. The impact of this would be many more tonne kilometres of freight being generated to supply value-adding end users in Australia than had been the case with export of relatively low-value woodchips and logs from the Port of Portland to overseas buyers.
- The District Council of Grant is undertaking a review of land use planning policies across the council including a proposal to establish an industrial estate at the Glenburnie saleyards, which could logically be complemented by an adjacent intermodal terminal.

The proposal is for the rebuilding of 81 kilometres of rail track and the establishment of an intermodal terminal at Glenburnie, five kilometres to the east of Mount Gambier.

Heywood to Glenburnie (Base Map National Freight data Hub)

Use of rail will result in lower transport resource costs for industry, plus significant community benefits, in terms of road safety and road damage and maintenance issues. There are also environmental benefits through reduced GHG emissions, air pollution and noise nuisance.

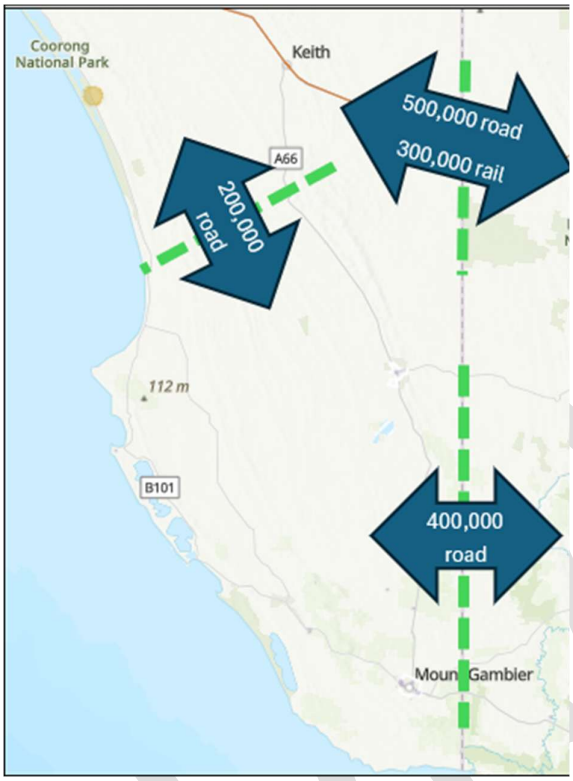
For the transport industry, reducing damage to trucks using rough roads and addressing a critical shortage of qualified truck drivers are added advantages of moving freight to rail.

There is a significant volume of freight to and from Mount Gambier that the region consumes and generates. These flows are shown as two way flows of equivalent 40 foot equivalent units (a B Double carries 1.5) crossing two cordon lines to the east and west compared to the road and rail freight crossing the state border near Bordertown. This includes log trucks and empty return heavy vehicle movements.

[2] Rail corridor and freight analysis for the Limestone Coast and South West Victoria

[3] Building the Nation: Growing the Green Triangle's Contribution to Australia's Future

There are around 200,000 40 foot equivalent units per annum to and from Adelaide, 25% of the total freight on the Dukes Highway and the ARTC's Adelaide to Melbourne corridor. The opportunities regarding any rail potential for the rail line between Mount Gambier and Wolseley will be the subject of a separate analysis.



40 foot container equivalents crossing three cordon lines (Base Map National Freight data Hub)

Initial assessments of the South Eastern freight to and from Victoria and its potential to support a viable rail freight service indicates that the benefits exceed the total costs but are dependent on the volume of rail freight to Melbourne, Sydney, Brisbane and the Port of Portland. This analysis is currently ongoing. The investment by the Australian Government in upgrading the Maroona to Portland rail line will enhance the business case for the Heywood to Glenburnie re-activation and standardisation.

There is still a need to refine the business case, determine industry's willingness for rail to be part of their logistics solution and to determine how such a project would be funded and delivered.

Further information will be provided in time for consideration by the South Australian Governments Limestone Coast Area Plan (Transport Study) that is understood to commence in the second half of 2025.

During consultation in 2022 there was cross-border support for this project from Regional Development Australia Limestone Coast, the City of Mount Gambier, District Council of Grant, Regional Development Australia Barwon South West, the Glenelg Shire and Port of Portland Authority.

2. Summary – Glenburnie to Heywood

The Glenburnie Intermodal Terminal outline business case consultation draft has been developed to consider the merits of introducing a rail freight service to the Green Triangle region in South Australia.

The transport problems in the Green Triangle are currently costed at $46 million per annum and predicted to increase to $66 million if plans for wood industry processing growth are realised,

After considering eight alternative locations, the preferred location for the intermodal terminal is at Glenburnie, eight kilometres to the east of Mount Gambier.

The assessment has some key assumptions.

- The costs are based on a standard 40-foot trailer or container, not net tonnes, due to varying tonnes per container and uncertainty regarding backloading percentages.
- Costs are generally based on public information from the Transport for

NSW guidelines [4], Australian Infrastructure and Transport Ministers Guidelines [5] and the CSIRO [6].

- The freight task is for outbound freight only, from the Glenburnie Intermodal Terminal catchment and only 75% of the freight that is within the catchment of the destination intermodal terminals.

Three types of costs used in the Glenburnie Intermodal Business Case:-

- Estimated (or Shadow) Price, includes an allowance for profit used to estimate mode share
- Resource Costs to determine who incurs the costs of the project including the community
- Economic costs which exclude transfer costs such as rail access fees and road user charges used to determine the benefits and costs of the project

It is assumed that construction would commence one year after financial approval and be undertaken over a two-year period. Consideration of timing should also consider the timing of other projects such as the Glenburnie Industrial Estate and increased wood product manufacturing.

The **most likely cost** in $2024 to establish the Glenburnie Intermodal Terminal and reopen the rail line to Heywood in Victoria is **$150 million**. Outturn costs will be dependent on project timing.

The impact of the expected case is:-

- Sydney and Brisbane intermodal terminals-10,000 40 foot containers a year
- Port of Melbourne import and export-1,300 40-foot containers a year
- Bulk commodity transport to the Port of Portland
- There appears to be only a limited amount of freight to Melbourne due to the short haulage distance but this is highly dependent on the destination intermodal terminals in Melbourne and any associated logistics facilities. It is assumed that intermodal logistics terminals in Melbourne would be operational at Dynon, Laverton, Somerton and Beveridge however the analysis does not determine the distribution of freight between these sites. This would be dependent on freight that is to be transported to Sydney, Melbourne or other regional locations.
- There is smaller amount of freight between Mount Gambier and Adelaide, including freight forwarded to Perth due to the need for the trains to operate via Ararat of around 100,000 40-foot containers a year

It is expected that if an intermodal terminal at Glenburnie is developed, then by 2030:-

- Transport costs will be $23 million less a year than would have been otherwise
- There will be 3 million less heavy vehicle kilometres on Australia's road

[4] Transport for NSW Economic Parameter Values - August 2022
[5] Australian Transport Assessment and Planning Guidelines - August 2021
[6] CSIRO - Inland Rail Supply Chain Mapping Project: Reference Case Modelling – March 2022

network compared to 20 million additional kilometres if the project did not proceed

- The number of additional heavy vehicle drivers and rail transport workers will be reduced to 25 extra, 75 less than required if the project did not proceed
- The road transport industry costs would only reduce marginally by $2 million per annum

The economic analysis indicated that the initiative could be seen as having an economic justification, with the total benefits $1.80 for every dollar spent on the project (**Benefit Cost ratio of 1.8)**.

Figure 1 shows the range of economic and intermodal train operations from a set of sensitivity tests.

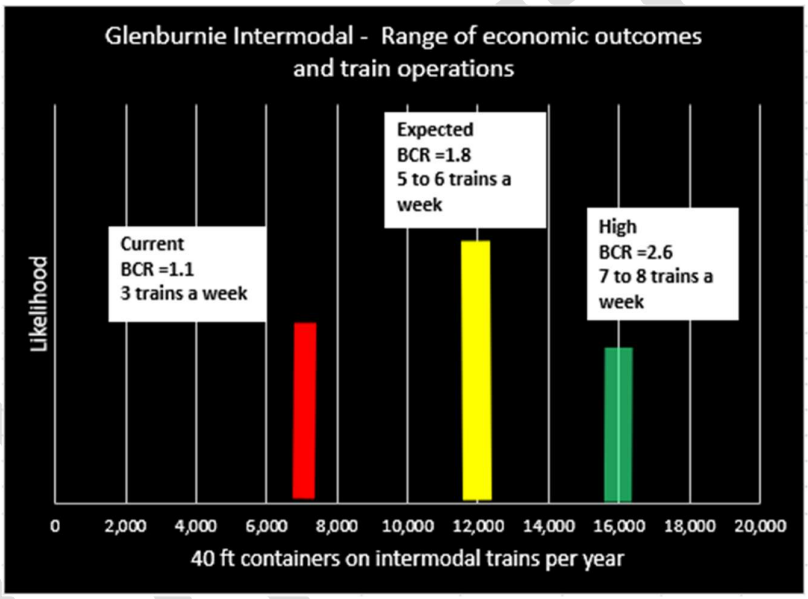


Figure 1

The key messages are:-

- The freight task mix is estimated to change if a significant increase in wood product processing compared to woodchip and log export occurs and an industrial estate is established at Glenburnie.
- While total tonnes transported remains similar, the land freight transport task will increase from 1.6 billion to nearly 2.1 billion net tonne kilometres a year, as freight travel distances increase, an increase of 27%.
- There are changes underway in the wider rail sector such as Inland Rail, new efficient Intermodals and the Maroona to Portland upgrading that will reduce operating costs and have a direct impact on the viability of the Glenburnie Intermodal.

3. Problem Identification and Prioritisation

3.1 Nationally significant problem/opportunity statement

The region has a significant economic base with industries such as forestry and horticulture.

Three investigations have recently been undertaken:-

- 2020 CSIRO[7] report on the transport task and options for intermodals for Regional Development Australia Limestone Coast
- 2021 IndustryEdge report prepared for the Green Triangle Forest Industries Hub Incorporated
- 2022 review of freight flows and options undertaken by the Rail Futures Institute on behalf of Regional Development Australia Limestone Coast

The CSIRO has a detailed origin destination matrix of freight movements across Australia and have estimated that 16 million tonnes of freight per annum have their origin or destination within the region, which generates:-

- 3.1 billion net tonne kilometres per annum of freight moved within the region and to other Australian destinations and origins
- 450,000 road truck movements per annum
- Of this freight task it is estimated that there are 1.4 billion Net Tonne Kilometres of freight per annum generated in the Regional Development Australia Limestone Coast region which is destined for locations outside of the region
- Freight coming into the region excluding timber destined for mills is estimated at 0.8 billion Net Tonne Kilometres per annum

IndustryEdge identified that there were significant opportunities to increase the value of manufactured timber product in the Green Triangle region over the next 10 years which could result in additional freight traffic task.

Based on this freight flow there are five problems that affect the community and governments, freight cost, environment, safety and damage to the road and rail assets.

Table 1 shows the scale of the strategic problem caused by the movement of freight that could be reduced by an intermodal developed at Glenburnie.

Strategic Problem Assessment - $ million per annum						
	Freight Transport Cost	Safety	Environment	Road damage costs	Rail Track damage costs	Total
Current Freight - Base Case	$ 13	$ 9	$ 7	$ 16	$ 0	$ 46
Increased Freight - Base case	$ 20	$ 13	$ 10	$ 22	$ 1	$ 66

Table 1

The total impact is therefore at least **$48 million** per annum with current freight flows rising to **$87 million** per annum when the freight task increases from around 2027.

These costs are not theoretical as there are specific concerns in relation to road safety for wood product freight in South Australia and Victoria,

[7] CSIRO - TraNSIT – Limestone Coast and South West Victoria

- 5 fatalities between 2020 and 2022
- 21 truck rollovers in 2019/20
- 86 truck rollovers between 2011 and 2022

3.2 Problem/opportunity location

The CSIRO undertook a study in 2020 that covered the Regional Development Australia Limestone Coast region and the Glenelg Shire Council shown on the following diagram.

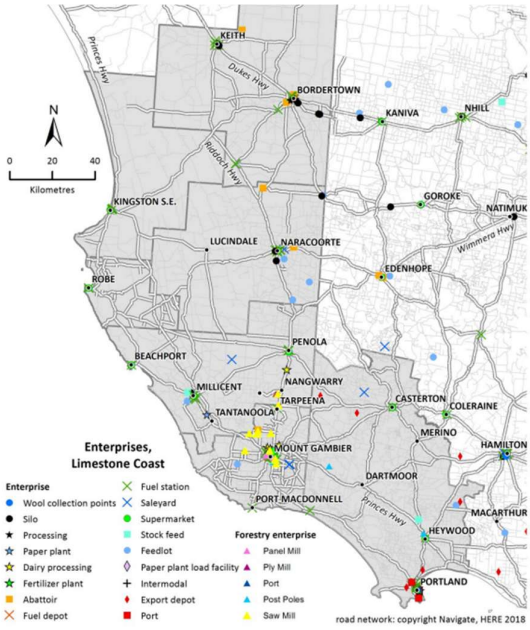


Figure 2

Figure 4 shows the nearest intermodal terminals in the region at Bordertown and Dooen, near Horsham, both on the Adelaide to Melbourne interstate rail corridor and Warrnambool, on the Victorian broad-gauge network.

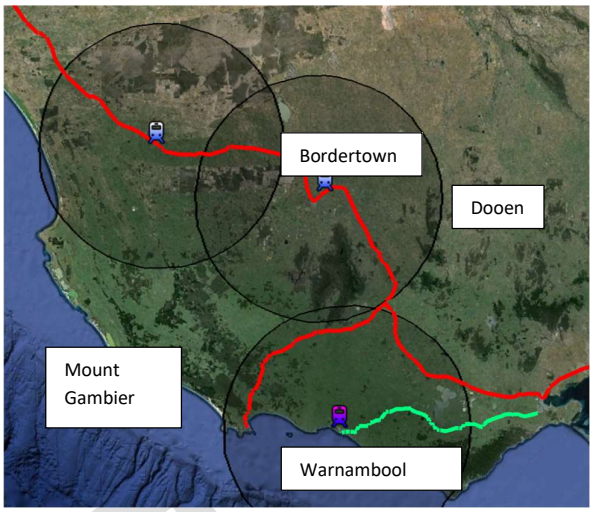


Figure 3

3.3 Problem/opportunity root causes and time period

Th root causes of the problem of having no intermodal terminal in the region occurred in the mid 1990's when the rail line linking Wolseley and Heywood with Mount Gambier, Snuggery, Dartmoor and other smaller towns was not converted from broad to standard gauge, when the Adelaide to Melbourne interstate mainline rail corridor was converted to standard gauge in 1995 as part of the Australian Government's One Nation program.

Figure 4 shows in green the network as an isolated island of broad-gauge lines.

Figure 4

3.4 Information about the problem and opportunity

The problem is that the region generates a significant quantity of freight that is transported over significant distances to other locations, especially within Victoria and north in NSW and Queensland which causes cost, safety, environmental and asset deterioration costs.

The opportunity is to transfer some of the freight to rail reducing those impacts.

In July 2021 IndustryEdge Pty Ltd prepared a report for the Green Triangle Forest Industries Hub Incorporated examining opportunities to increase timber processing for the Green Triangle plantation forestry industry.

The key findings were:

> *"Over the next two decades, the region's softwood supply cannot increase, but will be maintained, requiring the region to continue its work to utilize all the softwood resource."*
>
> *"To expand its production to match growing national demand, the region must focus efforts on utilizing the hardwood plantation resource to manufacture wood-based building products. Currently, that material is all exported. That can change. In its own right, and blended with softwood resource, the plantation hardwood resource may be used to manufacture a wide range of engineered wood products and wood panels used to build Australia. Hardwood resource could also be used to supply some of Australia's growing demand for wooden packaging and industrial products".*

The analysis by IndustryEdge identified the following potential change in the resource use, as wood processing increases:

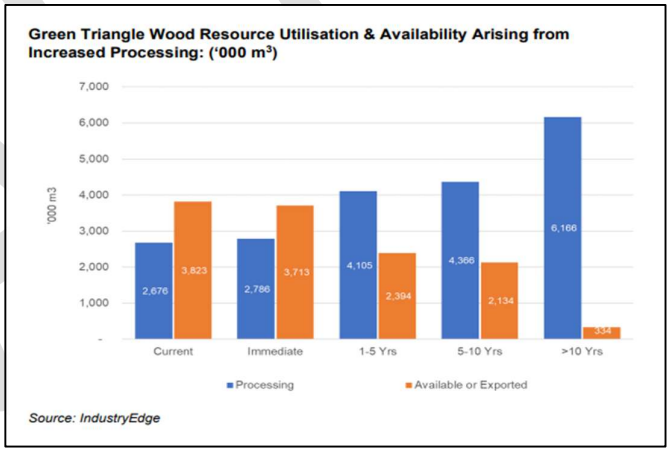


Figure 5

The gross value of wood products manufactured in the region could increase almost 60% to $1.516 billion per annum by 2032.

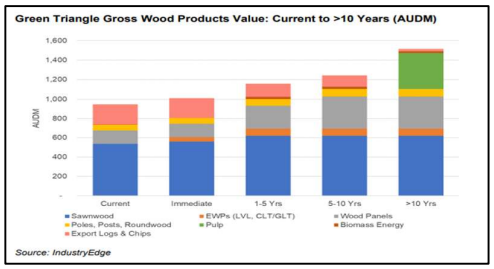


Figure 6

Further with the expansion of industry, the availability of land at competitive prices, coupled with good transport access near to an adequate local stable workforce will be key to the success of the changes.

With the change in production the total freight task would increase as shorter trips to Portland are replaced by longer trips to locations of domestic consumption and container export ports.

4. Identifying and analysing options

4.1 Identify a longlist of options

A long list of nine potential options have been developed:-

- Complete the existing funded road investment
- Bordertown intermodal
- Potential Hamilton intermodal
- Upgrade the Maroona to Portland rail line
- Snuggery Intermodal and private sidings via either Wolseley or Heywood
- Mount Gambier intermodal and private sidings via Wolseley
- Mount Gambier intermodal and private sidings via Heywood
- Mount Gambier intermodal and private sidings connecting to both Heywood and Wolseley
- Potential Portland or Heywood Intermodal

4.2 Analysis of options

Of the nine options, eight are assessed with the funded road investment is assumed to be completed as programmed.

4.2.1 Bordertown Intermodal

Figure 7

The Bordertown intermodal is in South Australia, 20 kilometres to the west of the South Australian and Victoria Border.

It is located on the Adelaide to Melbourne Interstate mainline corridor.

However, it has some issues in relation to providing freight services the Green Triangle region:-

- It is 180 kilometres north of Mount Gambier
- The site is small and constrained

It is recommended that for the purposes of providing intermodal services in the Mount Gambier region that it is **not considered** further but may be an option to provide services in the Tatiara region.

4.2.2 Hamilton Intermodal

The 100 kilometre radius catchment for a potential intermodal at Hamilton is shown in green on the following map. The Dooen and

Warrnambool intermodal catchments are shown in red.

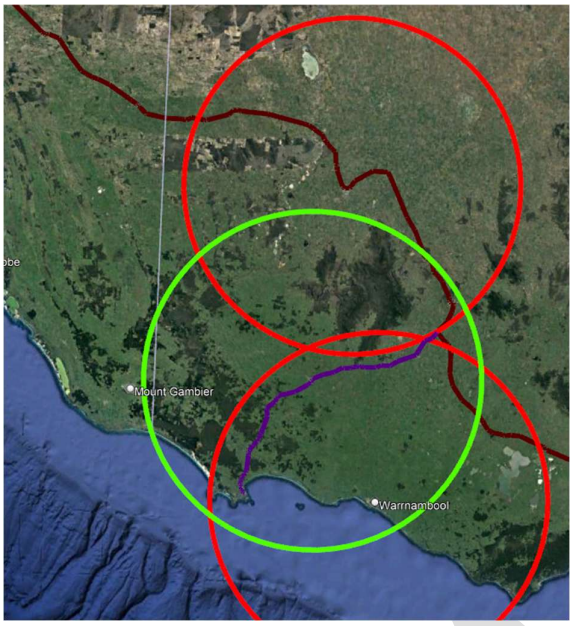


Figure 8

A potential Hamilton intermodal has the key advantage of being on the Maroona to Portland standard gauge line (shown in purple) linking into the Adelaide to Melbourne section of the Interstate mainline corridor.

However, it has some issues in relation to providing freight services:-

- It overlaps both the Dooen and Warrnambool intermodal catchments, potentially reducing demand at those locations
- It is 100 kilometres east of Mount Gambier

It is recommended that for the purposes of providing intermodal services in the Mount Gambier region that it is **not considered** further.

4.2.3 Snuggery Intermodal and private sidings via Wolseley or Heywood

Snuggery is 34 kilometres west of Mount Gambier and the location of the Kimberly Clark paper Mill.

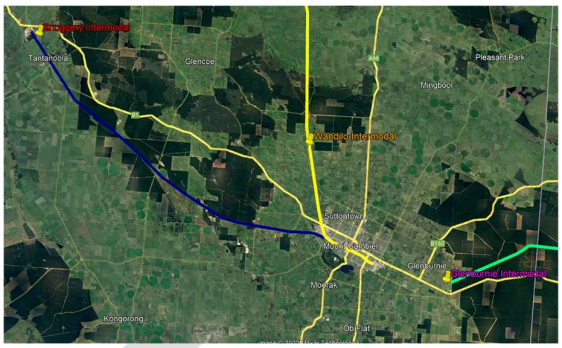


Figure 9

The key disadvantage of a Snuggery Intermodal is that it is not located at the centre of the other timber industries in the Green Triangle region in comparison to an intermodal at Wandilo or Glenburnie.

It is recommended that for the purposes of providing intermodal services in the Mount Gambier region that it is **not considered** further but may become viable if there is sufficient demand to justify the extension.

4.2.4 Mount Gambier intermodal and private sidings via Wolseley

The Wolseley to Mount Gambier rail line would be reinstated with an Intermodal established to the north of Mount Gambier. As the catchment for this site includes most of the production facilities near Mount Gambier it is included as a **shortlisted option**.

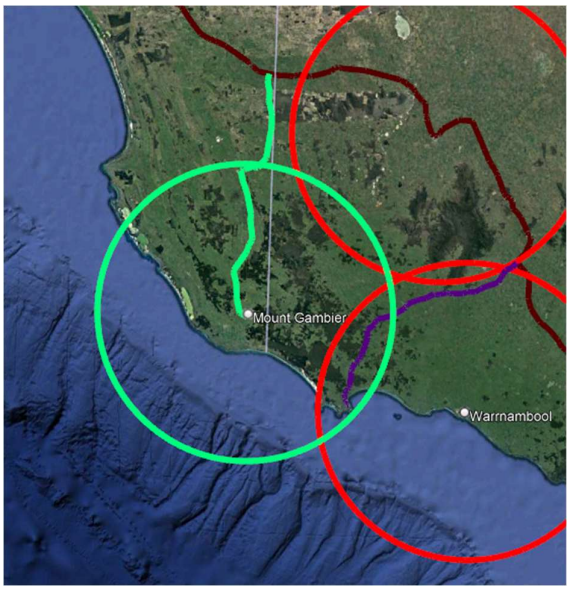


Figure 10

4.2.5 Mount Gambier intermodal and private sidings via Heywood

The Heywood to Mount Gambier rail line would be reinstated with an Intermodal established to the east of Mount Gambier. As the catchment for this site includes most of the production facilities near Mount Gambier it is included as a **shortlisted option**.

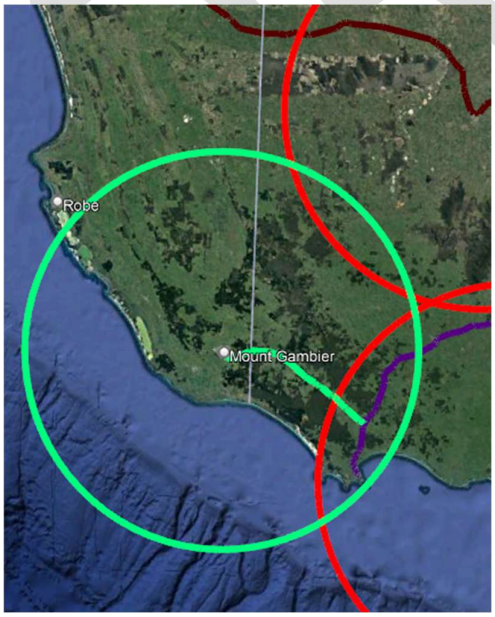


Figure 11

4.2.6 Mount Gambier intermodal and private sidings via Wolseley and Heywood

The Heywood to Wolseley rail line would be reinstated with the potential to establish an Intermodal established to the east of Mount Gambier. As the catchment for this site includes most of the production facilities near Mount Gambier it is included as a **shortlisted option**.

It should be noted that the South Australian Government has advised that an easement exists through the rail lands precinct in Mount Gambier.

4.2.7 Potential Portland or Heywood Intermodal

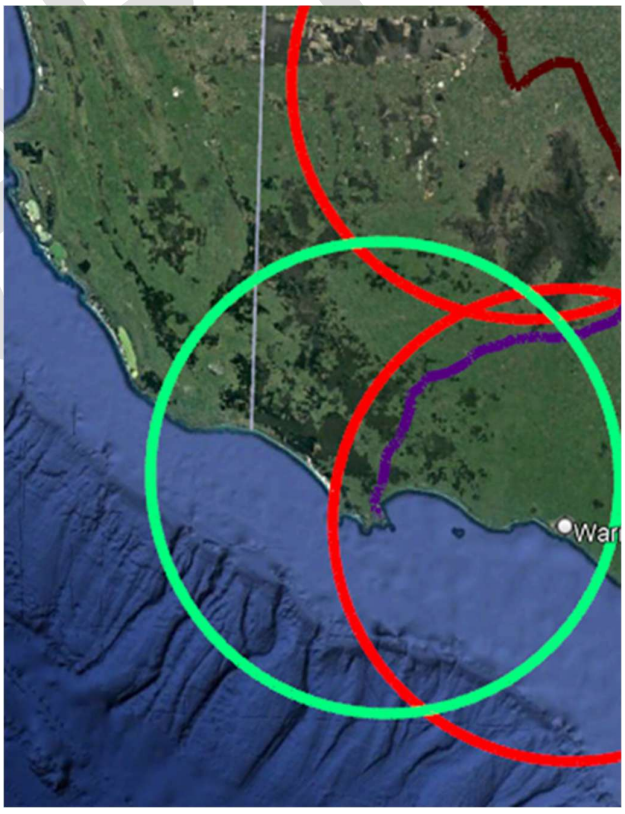


Figure 12

An Intermodal terminal in the vicinity of Portland or Heywood would be a lower cost option, however its catchment is smaller and

would involve an 80 kilometre longer road freight movements compared to a Mount Gambier intermodal terminal.

It is recommended that for the purposes of providing intermodal services in the Mount Gambier region that it is **not considered** further but may become viable if there is sufficient demand to justify the extension.

Question
Are there any other locations for an intermodal that should be considered?

Question 1

5. Selecting a Preferred Option

Of the ten options, three were recommended for more detailed analysis with the existing road investment case being retained as the Base Case and noting that the Maroona to Portland line upgrade is now funded.

- Mount Gambier intermodal and reinstatement of corridor to Wolseley
- Mount Gambier intermodal and reinstatement of corridor to Heywood
- Mount Gambier intermodal and reinstatement of complete corridor from Wolseley to Heywood

CSIRO undertook a detailed report for Regional Development Australia Limestone Coast in 2020 looking at the need and potential for a road/rail intermodal terminal in the Green Triangle area.

The CSIRO report recommended the intermodal terminal should be located at Glenburnie.

Table 6 summarises the three shortlisted options showing the CSIRO estimated potential freight movements[8], indicative refurbishment costs and a cost effectiveness ratio comparing investment to potential 40 foot containers:-

Overview of Shortlisted options			
Option	Potential Forty foot equvalent containers per year	Reinstatement cost	Ratio of reinstatement costs over 40 ft containers
Wolseley to Mount Gambier	2,318	$240 million	$ 103,538
Wolseley to Heywood	22,778	$400 million	$ 17,561
Mount Gambier to Heywood	17,312	$130 million	$ 7,509

Table 7

As can be seen the preferred option is therefore to reinstate the rail line between Heywood and Mount Gambier and develop an intermodal terminal at a location on the eastern side of Mount Gambier at Glenburnie. It should be noted that this does not preclude further reinstatement of the remaining corridors.

[8] CSIRO - TraNSIT – Limestone Coast and South West Victoria

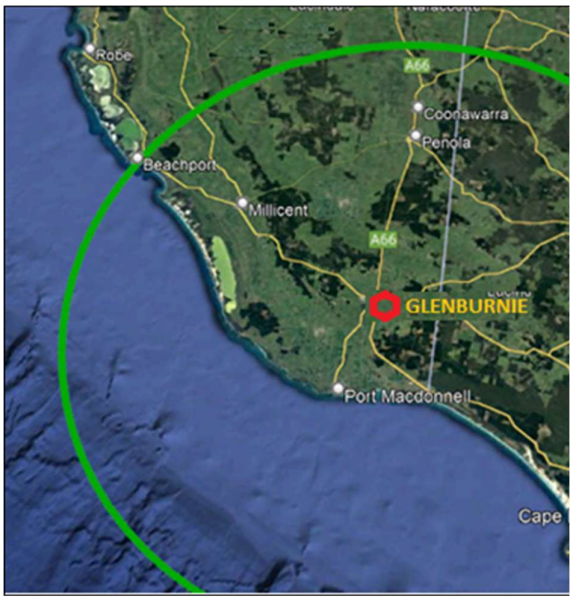


Figure 13

The key advantages of Glenburnie for industry expansion and an Intermodal site are :

- The majority of softwood and hardwood forests are within 85 kilometres of Glenburnie.
- Glenburnie is on the Princes Highway and the Mount Gambier Ring Road (Fairbanks Road) providing links to Penola and to the west of Mt Gambier.
- The South Australian Government owns the 27-metre wide, and 1,400-metre-long rail corridor and track infrastructure at the north west side of the site.
- The adjacent land south of the rail corridor including the current Stock Yard Facilities is owned by the District Council of Grant (South Australia).

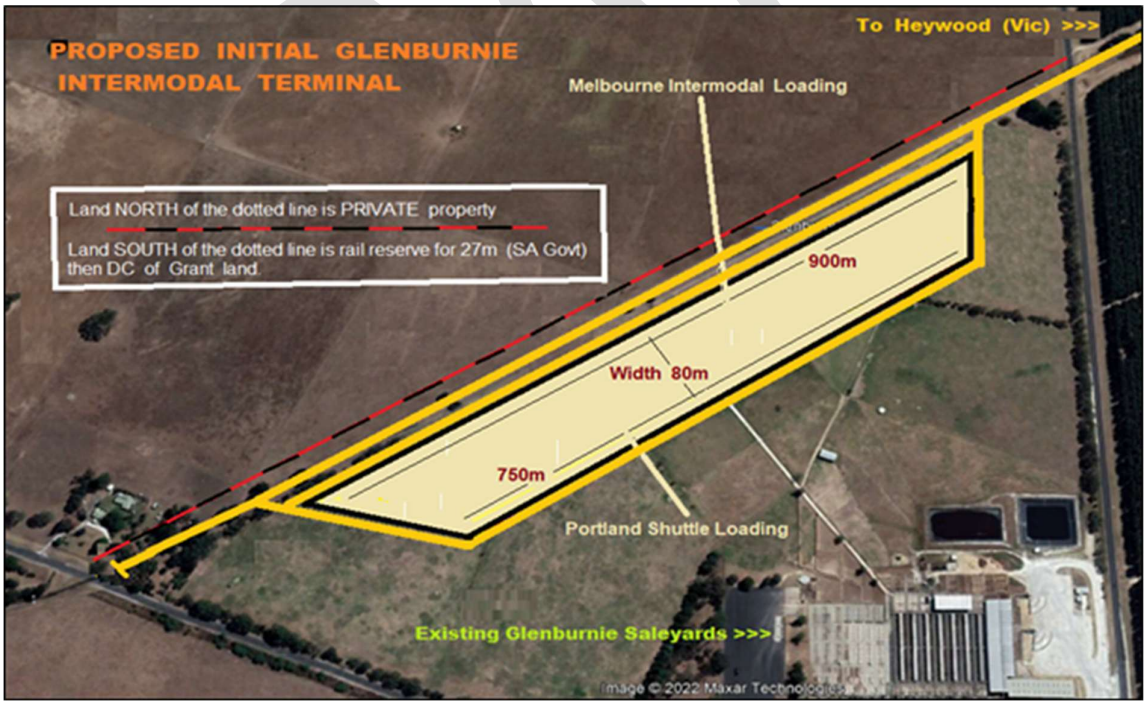


Figure 14

There are several potential activities that can be undertaken adjacent to an intermodal terminal facility, subject to negotiation of suitable commercial arrangements with the terminal owner and operator including:

- Freight transfer between road and rail of both containerized and bulk freight traffics
- Freight logistics hub operations, like those at Ettamogah north of Albury (New South Wales), where logistics companies have established efficient freight consolidation and distribution operations.
- Production and storage of bulk commodities such as export wood fuel pellets
- Manufacture of finished timber products
- A large manufacturing facility such as a pulp mill.

The currently dormant 81-kilometre-long broad-gauge railway passing through the Glenburnie intermodal terminal site links east to the standard gauge Australian Rail Track Corporation network at Heywood (Victoria) giving access to Geelong, Melbourne, and all other Australian mainland capital cities.

- 11 % of the total distance is within South Australia, and 89 % within Victoria.
- The land and track assets are owned within South Australia by the South Australian Government and within Victoria by VicTrack, a business unit of the Victorian Government.

The specific works identified in re-activating the 81-kilometre railway are:

- clearance of vegetation and trees
- replacing all existing life expired wooden sleepers with new standard gauge long life concrete sleepers, thus converting the line to standard gauge at the same time.
- Either reuse existing 80 pound per yard serviceable rail or seek to acquire surplus 47 kilogram per metre rail from the Australian Rail Track Corporation.
- Minor works on bridges
- Upgrade six level crossings
- Re-locate the existing bike path through Dartmoor (Victoria) so that a re-activated railway can resume the original rail alignment through Dartmoor, The Shire of Glenelg (Victoria) has indicated agreement to relocate the existing bike path beside the railway provided the associated costs are met within the overall line re-opening budget.

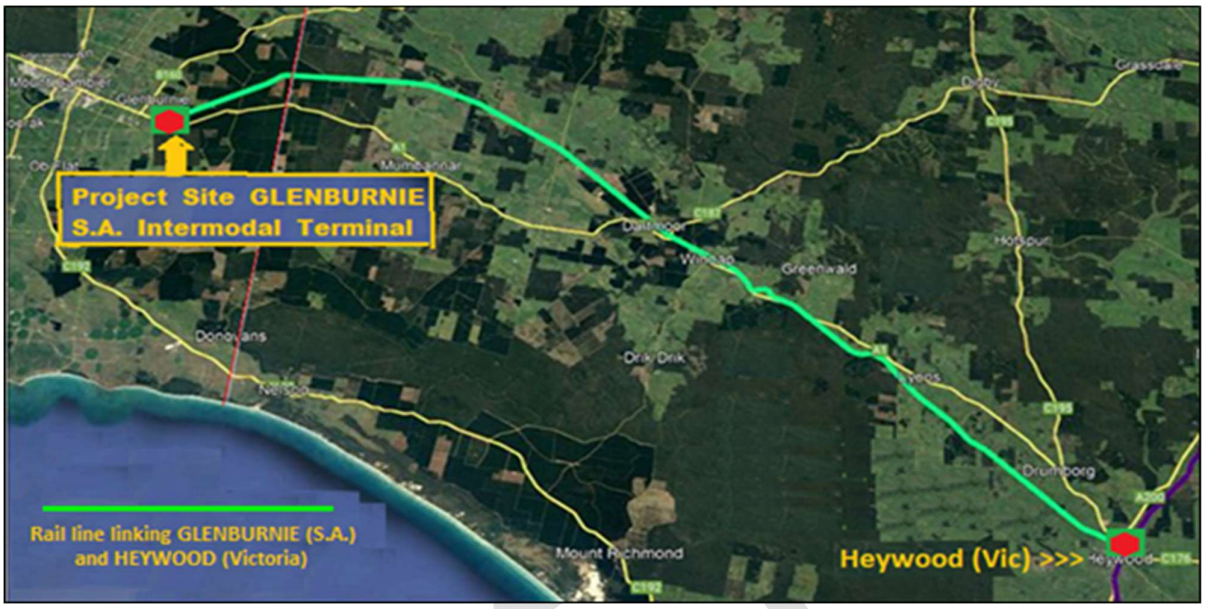


Figure 15

6. Key Assumptions and Technical Papers

Table 2 shows the key assumptions used in the Glenburnie Intermodal Business Case based on Australian and State Government guidelines for the assessment of infrastructure projects.

Glenburnie Intermodal Business Case - Assumptions		
Assumption	Included	Comment
Commercial in Confidence Information	X	
Costs based on Australian and State Government documentation	+	
The rail corridor and assets are available between Glenburnie and Heywood	+	South Australian and Victorian Governments need to confirm
An intermodal can be constructed at Glenburnie on the rail corridor and the District Council of Grant land	+	Rail corridor is 27 metres wide at Glenburnie.
Freight demand increase over time	+	Based on IndustryEdge scenario excluding Pulp Mill
Freight distributed over selected supply chains	+	Supply chains from Glenburnie / Mount Gambier to Melbourne, Port of Melbourne, Sydney, Brisbane, Adelaide, Perth and the Port of Portland
A Logistics mode choice model based on transport costs	+	
Glenburnie Industrial estate development proceeds as proposed by the District Council of Grant	+	allowing new production facilities and the establishment of freight logistics hubs,
Key transport projects including Inland Rail between Melbourne and Brisbane and upgrading of the Maroona to Portland line by 2027	+	
The Glenburnie to Maroona rail project is undertaken in 2025 with the first train operating in early 2027	+	
Freight Cost	+	
Safety impacts	+	
Environmental impacts	+	
Transport System damage	+	Includes road and rail networks
Scenario analysis	+	Scenarios considered, change in freight volumes, proximity of logistics hubs to intermodals and how much of the Glenburnie Industrial estate affects transport volumes
Sensitivity Tests	X	
User Pays analysis	X	Needs to be undertaken at a later stage when deliverabilty partners identified
Wider Economic Benefits	X	
Induced Demand	X	
Additional Economic Uplift	X	

Table 2

Question
The South Australian and Victorian Governments need to confirm the availability of the rail corridor and assets.

Question 2

7. The Base Case and Project Case

The Base Case assumed in this analysis is:-

- Freight from the region will continue to be transported by road
- The road vehicles used are primarily B-doubles with some 6 axle Semitrailers and Common Road Trains
- Road maintenance including current approved road expenditure will continue at existing levels and there will be no changes over time to the road conditions.

The Project Case assumes: -

- An Intermodal freight terminal will be developed at Glenburnie, eight kilometres to the east of Mount Gambier
- The railway between Glenburnie and Heywood will be reinstated to allow operation with standard mainline locomotives with 23 Tonne axle loads and freight wagons of at least 21 Tonne axle loads with a maximum trip time of around 1.5 hours and up to 23 tonne axle loads at a reduced speed.
- Train length will be limited to a maximum of 820 metres due to constraints at Maroona
- Intermodal train services would start at three return services a week to Melbourne, including to the Port of Melbourne, connecting with other interstate train services and increase to around 6 to 7 trains a week.
- Bulk train services between Glenburnie and the Port of Portland would be dependent on demand.

8. Freight Flows

8.1 Green Triangle Wood Flows

In July 2021 IndustryEdge Pty Ltd prepared a Wood Flow report for the Green Triangle Industries Hub Incorporated [9].

Technical Paper 1 outlines the process that was used to determine the potential change in wood product flows for use in the economic assessment of the proposal.

There are two scenarios that have been adopted for this analysis:-

- wood product flows continue at the same rate as currently.
- An increase in wood product processing excluding a potential pulp mill.

The transport of wood products from forest to production plants is not included as it is assumed in the Glenburnie Intermodal Business Case that these wood flows would continue.

Table 3 shows the current and increased freight flows across the Green triangle region. Note that a pulp mill is not included as it is a potential long-term project and no potential locations have been identified.

[9] IndustryEdge - Building the Nation: Growing the Future, Opportunities for Green Triangle Plantation Forestry

Summary of the Green Triangle Wood Product Flows		
Commodity	Freight task - Tonnes per annum	
Wood Product - Production	Current	Increased (no pulp mill)
Sawnwood	465,000	536,000
Engineered Wood products		63,000
Wood panels	173,000	420,000
Roundwood	137,000	156,000
Pulp		
Biomass Energy	13,000	194,000
Wood Product - Direct Forest export		
Sawmills - woodchips	609,000	609,000
Export Logs and woodchips from forest	630,000	600,000
Plantations Softwood Chips - Residue	68,000	68,000
Plantation Hardwood Chips	1,892,000	1,375,000
Total	**3,987,000**	**3,921,000**

Table 3

Table 4 shows, as a check, the estimates for the current and increased freight task compared against information extracted from the CSIRO TraNSIT data base.

Comparison of estimated Freight Task			
	Net Tonnes	Billion Net Tonne kilometres	Trailers
CSIRO - total	3,503,756	2.12	165,527
Current - total	3,563,378	1.61	162,179
Increased freight - total	3,856,776	2.08	169,586
CSIRO - Outbound	2,634,863	1.21	145,840
Current - Outbound	2,694,485	1.09	118,734
Increased Freight - outbound	2,987,883	1.58	126,142

Table 4

8.2 Freight Flows in the Glenburnie Intermodal Catchment

As the Green Triangle region spans South Australia and Victoria, a significant proportion of the freight bound for the Port of Portland does not travel through the catchment of an intermodal terminal at Glenburnie. Logs are still transported to the timber mills in the region but have been excluded from the analysis as they would not be on rail due to the short distance and dispersed nature of the harvested trees.

Figure 16 shows the size of a 50-kilometre catchment which extends to Snuggery and Penola.

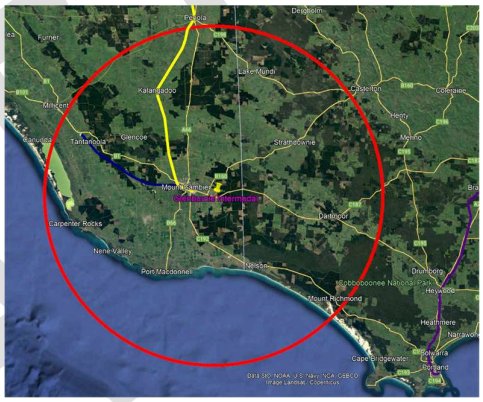


Figure 16

Table 5 shows the split of the wood resource [10] between South Australia and Victoria.

Distribution of Wood Resource in Green Triangle Region				
	Softwood		*Hardwood*	
Victoria	74,000	39%	114,000	80%
South Australia	115,000	61%	28,800	20%
Total	**189,000**		**142,800**	

Table 5

Question
Does this distribution of forest resources reflect the freight flows?

Question 3

[10] Timber Industry Road Evaluation Study 2023-2027

Table 6 shows the amended wood product flow and includes other freight flows from information extracted from the CSIRO's TraNSIT model.[11]

Freight Flow summary for Glenburnie Intermodal catchment		
Commodity	Freight task - Tonnes per annum	
Wood Product - Production	Current	Increased (no pulp mill)
Sawnwood	465,000	536,000
Engineered Wood products	-	63,000
Wood panels	173,000	420,000
Roundwood	137,000	156,000
Pulp	-	-
Biomass Energy	13,000	194,000
Subtotal	**788,000**	**1,369,000**
Wood Product - Direct Forest export		
Sawmills - woodchips	609,000	609,000
Export Logs and woodchips from forest	383,333	-
Plantations Softwood Chips - Residue	41,376	41,376
Plantation Hardwood Chips	381,580	277,311
Total	**2,991,289**	**3,665,687**

Table 6

Question

Does this distribution of all freight movements, excluding from Forest to Mill's, reflect the freight flows?

Question 4

8.3 Where does the Freight go?

The destination of freight is an important element of the economic assessment as both direct and third-party costs increase the further that the freight is transported.

The distribution is expected to change as:-

- Higher value freight is manufactured allowing an increased market at longer distances
- Increased exports and type of export for example bulk through the Port of Portland and containers through the Port of Melbourne
- Reduced rail transport costs due to the Inland Rail project and high efficiency intermodal facilities in Melbourne, Sydney and Brisbane

Figure 17 produced by the CSIRO[12], is an example of the flows of all wood products transported across Australia. This shows high concentrations of heavy vehicle movements near export ports and production facilities as well as significant flows between regions.

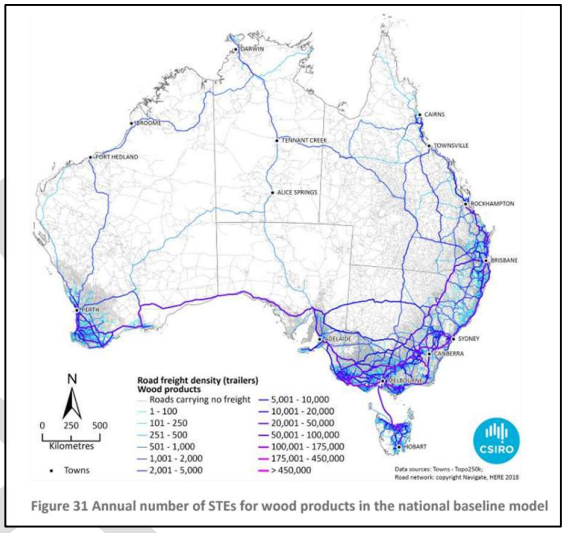
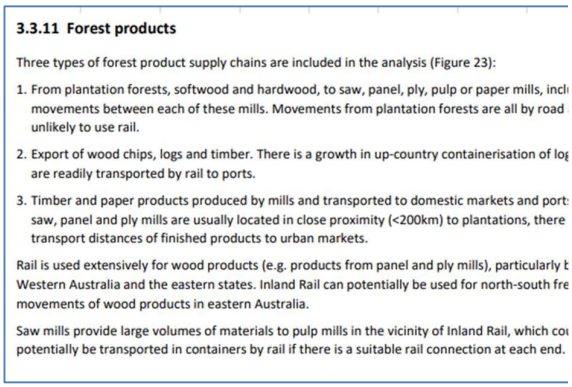


Figure 31 Annual number of STEs for wood products in the national baseline model

Figure 17

Figure 20 is an extract from the same Inland Rail Report[13] which discusses in dot point 3 the importance of transporting finished products to urban markets.

[11] Supply Chain Transport and Logistics Dashboard
[12] CSIRO Inland Rail Supply Chain Mapping Project: Reference Case Modelling – Figure 31
[13] CSIRO Inland Rail Supply Chain Mapping Project: Reference Case Modelling – Section 3.3.11



3.3.11 Forest products

Three types of forest product supply chains are included in the analysis (Figure 23):

1. From plantation forests, softwood and hardwood, to saw, panel, ply, pulp or paper mills, incl movements between each of these mills. Movements from plantation forests are all by road unlikely to use rail.
2. Export of wood chips, logs and timber. There is a growth in up-country containerisation of log are readily transported by rail to ports.
3. Timber and paper products produced by mills and transported to domestic markets and port saw, panel and ply mills are usually located in close proximity (<200km) to plantations, there transport distances of finished products to urban markets.

Rail is used extensively for wood products (e.g. products from panel and ply mills), particularly b Western Australia and the eastern states. Inland Rail can potentially be used for north-south fre movements of wood products in eastern Australia.

Saw mills provide large volumes of materials to pulp mills in the vicinity of Inland Rail, which co potentially be transported in containers by rail if there is a suitable rail connection at each end.

Figure 18

Understanding how these flows may change is key to the assessment of the economic viability of the Glenburnie Intermodal Terminal.

These changes include:-

- increased production resulting in higher value goods
- Reduced costs due to the use of rail including projects such as Inland Rail and intermodal terminals in Melbourne, Sydney and Brisbane.
- Changes in export markets

Table 7 is an initial estimate of the destination of the freight manufactured in Mount Gambier, excluding that bound for the Port of Portland [14]

Estimated Freight Task Distribution		
Destination	Tonnes	Distribution
Finished Timber		
Adelaide	96,000	25%
Perth	10,900	3%
Melbourne	159,700	41%
Port of Melbourne	10,000	3%
Sydney	91,900	24%
Brisbane	18,650	5%
TOTAL	387,150	
Other		
Adelaide	137,800	21%
Perth	16,600	2%
Melbourne	369,800	55%
Port of Melbourne	10,000	1%
Sydney	127,800	19%
Brisbane	10,000	1%
TOTAL	672,000	

Table 7

Question
What is the current estimated split of outbound freight except for freight bound for the Port of Portland?

Question 5

It is also assumed that 75% of the outbound freight (except to the Ports of Portland and Melbourne) would be within a catchment of 50 kilometres from intermodal facilities in Melbourne, Sydney, Brisbane, Adelaide and Perth.

Table 8 and Table 9 show the estimated distribution of freight applying the total outgoing freight task from Table 3 and the destinations from Table 4. It is assumed that the average load per 40-foot trailer or container is 20 Tonnes.

In addition, the following is assumed:-

[14] Government of South Australia, ECONOMIC ANALYSIS REPORT TO PUBLIC WORKS COMMITTEE, ATTACHMENT 1, South East Rail Network Project, 2001

- an allowance of 40,000 Tonnes for imports through the Port of Melbourne.
- A nominal 200,000 Tonnes per annum production, or logistics facility, established at the Glenburnie Industrial Estate.

Inbound freight is not included at this stage, as it needs consideration of such factors as specialist vehicles, such as fuel tankers, and backloading.

Current Freight Task - Tonnes and 40 ft trailers or containers per annum outbound only								
Tonnes	Total	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
Base Case	2,518,646	**476,284**	**62,131**	**224,374**	**36,216**	**236,897**	**27,456**	**1,455,289**
Other than Glenburnie Industrial Estate								
Glenburnie Industrial Estate		-	-	-	-	-	-	-
40 ft trailers and containers								
Current Freight Tas	53,168	**23,814**	**3,107**	**11,219**	**1,811**	**11,845**	**1,373**	**72,764**

Table 8

Increased Estimated Freight Task (no pulp Mill) - Tonnes and 40 ft trailers or containers per annum outbound only								
Tonnes	Total	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
Total	2,409,643	810,246	83,042	416,553	75,216	437,650	50,249	536,687
Other than Glenburnie Industrial Estate	2,009,643	637,205	65,307	327,591	59,152	344,183	39,518	136,687
Glenburnie Industrial Estate	400,000	173,041	17,735	88,962	16,064	93,467	10,732	400,000
40 ft trailers and containers								
Increased Freight Task except Glenburnie Industrial Estate	73,648	31,860	3,265	16,380	2,958	17,209	1,976	136,687
2028 ongoing Glenburnie Industrial estate	20,000	8,652	887	4,448	803	4,673	537	400,000

Table 9

Question
Do these Tonnes and number of 40 ft trailers and containers reflect what is occuring?

Question 6

9. Supply Chains

The determination of candidate supply chains is required to enable estimates of the mode split for the freight on each of the supply chains.

The process that was followed was to estimate the costs for:-

- A series of potential road links
- A series of potential rail links
- intermodal terminal handling
- bulk handling and storage

These were combined into the consolidated supply chains.

9.1 Line Haul Road Link Costs

Several road links that have been developed will later be combined with the rail links and intermodal terminal costs to estimate supply chains for several origin and destination pairs.

Costs are based on public information from the Transport for NSW guidelines [15], Australian Infrastructure and Transport Ministers Guidelines [16] and the CSIRO [17]

There are three costs used in the Glenburnie Intermodal Terminal Outline Business Case:-

- Estimated (or Shadow) Price based on resource costs plus a 20% allowance for Profit and risk which are used for the determination of mode share
- Resource costs which are used to determine which organisations and third parties incur those costs
- Economic costs which exclude transfer costs such as rail access fees and road user charges

There are two types of road links considered in this analysis:-

- Intermodal freight road links which are calculated on a 40 foot trailer or container basis and
- Bulk commodity freight road links which are calculated on a total commodity basis, for example to transport 300,000 tonnes and as a cost per net tonne

Common Road Trains are considered for bulk traffic for the Mount Gambier to Port of Melbourne and Adelaide to Perth corridors.

B-Triples have not been included as although they can carry more product, they appear to have the same length as a Common Road Train and higher operating costs. Most freight that would be associated with a Glenburnie Intermodal Terminal is generally lighter compared to bulk goods and use of B-Triples may not be justified.

The key cost assumptions relating to the operating costs of road vehicles is related to the quality of the road surface, how steep the roads are and what speed they travel at.

Table 10 shows the assumed unit rates for road costs for the Glenburnie Intermodal Terminal outline Business Case.

[15] Transport for NSW Economic Parameter Values - August 2022

[16] Australian Transport Assessment and Planning Guidelines - August 2021

[17] CSIRO - Inland Rail Supply Chain Mapping Project: Reference Case Modelling – March 2022

Estimate of Road Vehicle Operating Costs (Cents per km)			
Parameter	Level	hilly	Weighted avearage used in the Glenburnie Intermodal Buisness Case
Percentage of relevant road network	70%	30%	
Road Roughness (IRR)	5	5	
Gradient	0%	4%	
Curvature	20	20	
Max speed (km/hr)	100	100	
Backload	0%	0%	
6 axle Semitrailer	172	193	178
B double	202	238	213
Common Road Train	241	289	256
Fuel Consumption litres per 100 km			
6 axle Semitrailer	72	87	77
B double	87	113	95
Common Road Train	98	139	110

Table 10

In addition, there is assumed the following costs are incurred:-

- Driver costs per hour - $34.44 for 6 axle Semitrailers and $35.42 for B Double's
- Capital depreciation rate per vehicle kilometres - $0.16 for 6 axle Semitrailers and $0.20 for B Double's
- Direct supervision – 7.5%
- Profit and Risk allowance – 20%

Pickup and delivery costs are those associated with transporting freight to and from the train and end users for example production facilities or distribution centers.

These costs may be affected by several factors including:-

- Distance travelled
- speed of the vehicle
- What is the cost per kilometre, including the impact of battery powered Semitrailers suitable for short delivery runs
- How efficiently are these vehicles used, how much extra costs are incurred if the road vehicle needs to make empty trips.
    - In respect to the last dot point GHD reported for the Port of Melbourne[18] that for 6 axle Semitrailers there was a combined total of 851,000 20-foot containers moving through the Port of Melbourne. There was an estimated capacity of

[18] Port of Melbourne 2020 Container Logistics Chain Study July 2021

1,690,000 20-foot container slots available inferring that for each container moved there with twice as many slots available.

- It is assumed that there is less turnover at rail intermodal terminals in the cities and even less in regional areas

Table 13 shows the initial assumptions used in this analysis.

Pick up and delivery - 6 axle Semitrailer				
	distance one way (km)	Average road speed (km/hr)	Cost per road km (cents)	Empty running factor
Major City	15	20	339	1.5
Mount Gambier	20	50	202	1.2

Table 11

Table 12 shows the estimated intermodal road link costs on a cost per 40 foot trailer or container or a per tonne basis for bulk products.

Road Cost Link Summary						
Intermodal	**One way trip length**	**On road driving time – hours**	**Estimated (Shadow) price per 40 foot trailer or container one way**	**Estimated (Shadow) price per 40 foot trailer or container return**	**Estimated (Shadow) price per vehicle kilometre**	**Perceived cost per vehicle kilometre**
Mount Gambier to Melbourne – 6 axle Semitrailer	432	5.8	$ 1,393	$ 2,786	$ 3.22	$ 2.69
Mount Gambier to Melbourne – B-Double	432	5.8	$ 1,094	$ 2,188	$ 3.80	$ 3.17
Mount Gambier to Port of Melbourne – Common Road Train	432	5.8	$ 970	$ 1,940	$ 4.49	$ 3.74
Mount Gambier to Sydney – 6 axle Semitrailer	1,224	16.3	$ 3,866	$ 7,733	$ 3.16	$ 2.63
Mount Gambier to Sydney – B Double	1,224	16.3	$ 3,045	$ 6,091	$ 3.73	$ 3.11
Mount Gambier to Brisbane – 6 axle Semitrailer	1,966	26.2	$ 6,183	$ 12,367	$ 3.15	$ 2.62
Mount Gambier to Brisbane – B Double	1,966	26.2	$ 4,873	$ 9,747	$ 3.72	$ 3.10
Mount Gambier to Adelaide – 6 axle Semitrailer	435	5.8	$ 1,402	$ 2,805	$ 3.22	$ 2.69
Mount Gambier to Adelaide – B Double	435	5.8	$ 1,067	$ 2,133	$ 3.68	$ 3.06
Mount Gambier to Perth B Double	3,130	41.7	$ 7,741	$ 15,483	$ 3.71	$ 3.09
Adelaide to Perth Common Road Train	2,694	35.9	$ 5,907	$ 11,814	$ 4.39	$ 3.65
City Pick up and Delivery	15	0.8	$ 569	$ 1,138	$ 12.64	$ 10.53
Glenburnie Pick up and Delivery	20	0.4	$ 389	$ 778	$ 8.10	$ 6.75
Mount Gambier to Tumut Mill – 6 axle Semitrailer	867	11.6	$ 2,722	$ 5,444	$ 3.14	$ 2.64
Mount Gambier to Tumut Mill – B-Double	867	11.6	$ 2,143	$ 4,286	$ 3.71	$ 3.12
Wagga Wagga to Tumut Mill – Common Road Train	94	1.3	$ 218	$ 435	$ 4.63	$ 3.86
Bulk	**One way trip length**	**On road driving time – hours**		**Cost per Net Tonne**	**Estimated (Shadow) price per vehicle kilometre**	**Perceived cost per vehicle kilometre**
Mount Gambier to Portland – Bulk – Common road train	134	1.8		$ 16.70	$ 3.74	$ 3.15
Mount Gambier to Portland – Bulk – B double – from Mt Gambier plants	134	1.8		$ 23.73	$ 3.98	$ 3.36
Local Pick up or delivery (Origin or Desination only) 20 kilometres delivery	20	0.4		$ 7.02	$ 7.02	$ 5.91

Table 12

Question
Do the direct and total costs for the road transport links appear to be reasonable?

Question 7

Question
Are there any other road links that should be added?

Question 8

9.2 Rail Link Costs

There are two types of rail links:-

- Intermodal freight and
- Bulk freight

The train service between Glenburnie and Melbourne is:-

- limited in its total length to sixty - 40-foot containers, or 820 metres due to the crossing loop length at Maroona.
- Note that if this constraint could be eased, then the crossing loop at Heywood (930 metres) and the length of the Glenburnie Intermodal Terminal (approximately 900 metres, limited by the distance between the Prices Highway and Fairbanks Road) would become the maximum train length. The alternatives would be to operate the train to the Pyrenees crossing loop on the Australian Rail Track Corporation network but it would add 100 kilometres to the return trip, or a connection allowing direct train services from Glenburnie to Melbourne, but this would have significant capital cost.
- It is assumed that the transit time is 9 elapsed hours and 11 crew hours per trip
    - the train transit time is 8 hours in each direction
    - Due to the need to reverse the direction of travel at Heywood and Maroona an additional travel time of one hour in each direction
    - the crew will spend one hour at the start and end of each journey.
- Two train sets are included in the capital expenditure as the number of trains are expected to be up to six per week in 2027.

Other assumptions are:-

- Inland Rail between Melbourne and Brisbane is complete by 2032
- Train travel times are the same as in the Australian Rail Track Corporations Master Train Plan[19]

Fuel consumption is an important cost in rail operations and is impacted by several factors:-

- The age of the locomotives and how much the engines have improved in efficiency
- What is the ratio of engine power to the gross tonnes that are being hauled
- The terrain the train operates over, for example gradients and curvature

For this analysis the following fuel consumptions have been assumed:-

- Glenburnie to Melbourne – 5 litres per 1000 Gross Tonne kilometres
- Melbourne to Sydney – 5.5 litres per 1000 Gross Tonne kilometres
- Adelaide to Perth and Melbourne to Brisbane (Inland Rail) – 4.5 litres per 1000 Gross Tonne kilometres

No estimates of new zero emission rail technology such as battery-electric trains have been included in this analysis as this corridor is assumed to be a low priority for the deployment of this technology.

Table 13 shows the estimated rail link costs which are calculated on a 40 foot container

[19] Australian Rail Track Corporation – Master Train Plan – 21-04-24 page 250

basis or on a per tonne basis for bulk commodities

Rail Link Costs Summary					
Intermodal	One way trip length	Train travel time (excluding terminal) hours	Cost per 40 ft container One Way	Cost per 40 ft container Return	Cost per Net Tonne Kilometre (cents)
Glenburnie to Melbourne	440	9	$ 556	$ 1,112	12.6
Glenburnie to Adelaide	802	14	$ 987	$ 1,973	12.3
Melbourne to Sydney	916	15	$ 902	$ 1,805	6.6
Melbourne to Brisbane	1,901	32	$ 1,770	$ 3,540	6.2
Melbourne to Brisbane - Inland Rail	1,727	24	$ 1,244	$ 2,489	4.8
Adelaide to Perth	2,640	36	$ 2,480	$ 4,960	6.3
Bulk	**One way trip length**	**Train travel time (excluding terminal) hours**		**Cost per Net Tonne**	**Cost per Net Tonne Kilometre (cents)**
Train - Glenburnie to Portland - Bulk	109	2		$ 15.55	14.3

Table 13

Question
Do the costs for the rail transport links appear to be reasonable?

Question 9

9.3 Intermodal Terminal Costs

When a supply chain requires the transfer of containers for one mode to another there are costs associated with the process. Figure 19 shows an example from a CSIRO report [20]

Figure 19

The CSIRO has reported,[21] following industry consultation as part of the Inland Rail

[20] Inland Rail Supply Chain Mapping Project: Reference Case Modelling – Front Cover

[21] Inland Rail Supply Chain Mapping Project: Reference Case Modelling – Page 60

investigation that the cost per container lift to or from train, road vehicle or the ground is $80 based on industry advice.

Question
Does the rate of $80 per container lift seem reasonable?

Question 10

No allowance has been included for the new generation of semi-automated intermodal terminals.

Figure 20 shows a view of the Moorebank intermodal terminal in Sydney.[22]

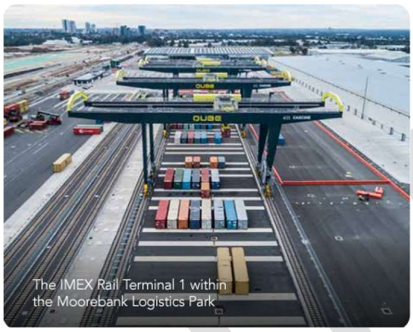


Figure 20

The Australian Transport Assessment and Planning Guidelines[23] worked example quotes a rate of $0.6 as the costs for the transhipment of a bulk product. This value is used in this outline business case.

In addition, if bulk storage is required at the production facility or at an intermediate location a cost allowance of $0.50 per tonne of throughput assuming

- $100 capital for storage
- 5000 tonnes of Storage
- 300,000 tonnes of throughput and
- 5 years repayment

9.4 Consolidated Supply Chains

Figure 22 to Figure 30 show the options for the supply chains that are subject to the modal split analysis as they are in single road vehicle or container loads.

- Mount Gambier to Melbourne
- Mount Gambier to the Port of Melbourne
- Mount Gambier to Sydney
- Mount Gambier to Brisbane
- Mount Gambier to Adelaide
- Mount Gambier to Perth

In addition one supply chain is shown for a specific bulk commodity

- Mount Gambier to the Port of Portland

In determining the total costs

- a combination of link costs and resources from the road, rail and intermodal calculations
- all results are for 40 foot trailers or containers except for the bulk loads to the Port of Portland which are shown on a net tonne basis.
- Figure 21 shows the key used in the figures.

Door to door delivery times are also shown on the supply chain diagrams.

- Figure 24 and Figure 26 show the assumptions for freight that is transferred in Melbourne to either a Sydney or Brisbane trains which considers the connection time between the two services. The

[22] Moorebank Intermodal Company Fact Sheet

[23] Australian Transport Assessment and Planning Guidelines Worked Example: W3 Freight 3.2 Rail An upgraded regional branchline August 2021

Brisbane train is assumed to use the Inland Rail corridor and has a mid morning arrival in Brisbane.

- It is assumed that road vehicles are only operated by one driver who requires a rest period of 7 hours after driving for 12 hours
- Two hours are added to all supply chains as a buffer
- Two hours are added for all pickup and delivery links
- Two hours are added as the cut off time before train departure

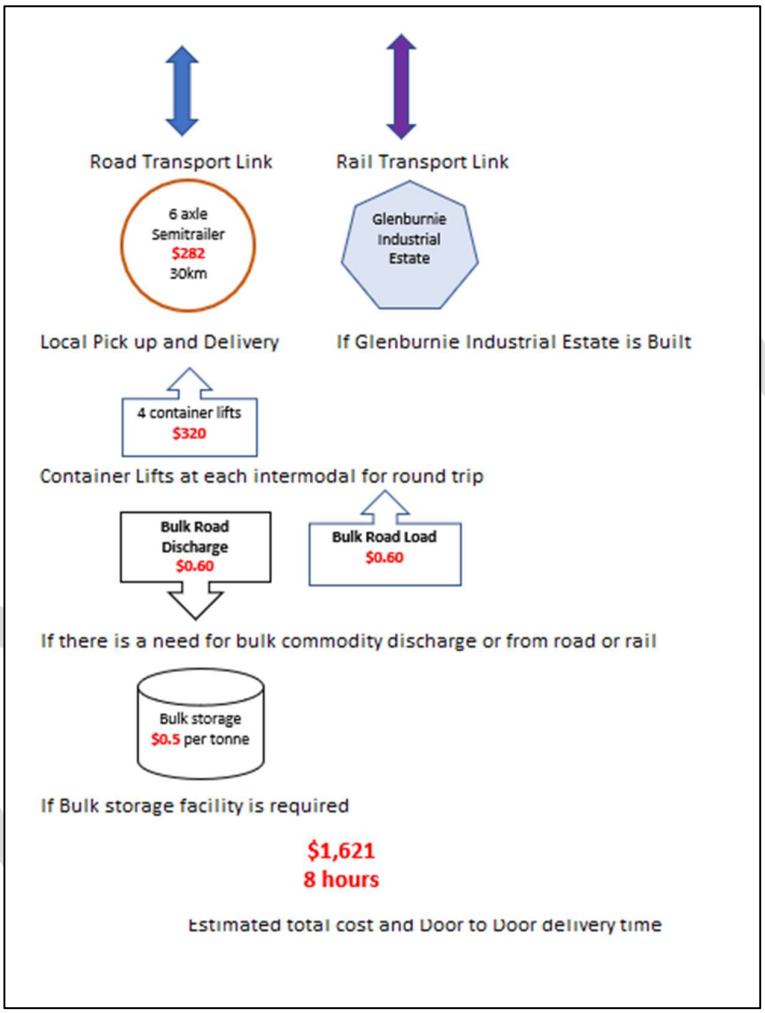


Figure 21

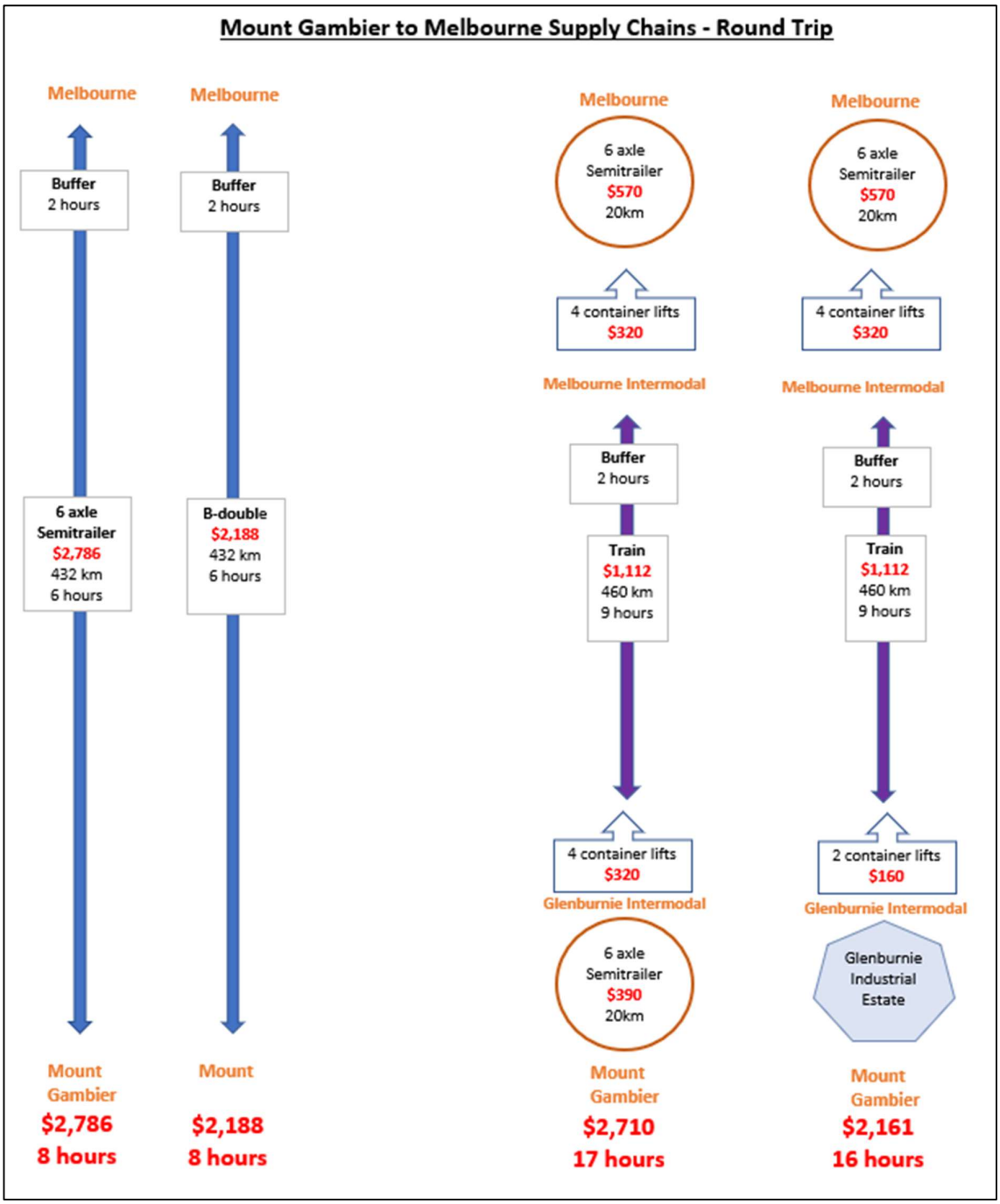

Mount Gambier to Melbourne Supply Chains - Round Trip
Melbourne
Buffer
2 hours
6 axle
Semitrailer
$2,786
432 km
6 hours
Mount
Gambier
$2,786
8 hours
Melbourne
Buffer
2 hours
B-double
$2,188
432 km
6 hours
Mount
$2,188
8 hours
Melbourne
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Melbourne Intermodal
Buffer
2 hours
Train
$1,112
460 km
9 hours
4 container lifts
$320
Glenburnie Intermodal
6 axle
Semitrailer
$390
20km
Mount
Gambier
$2,710
17 hours
Melbourne
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Melbourne Intermodal
Buffer
2 hours
Train
$1,112
460 km
9 hours
2 container lifts
$160
Glenburnie Intermodal
Glenburnie
Industrial
Estate
Mount
Gambier
$2,161
16 hours

Figure 22

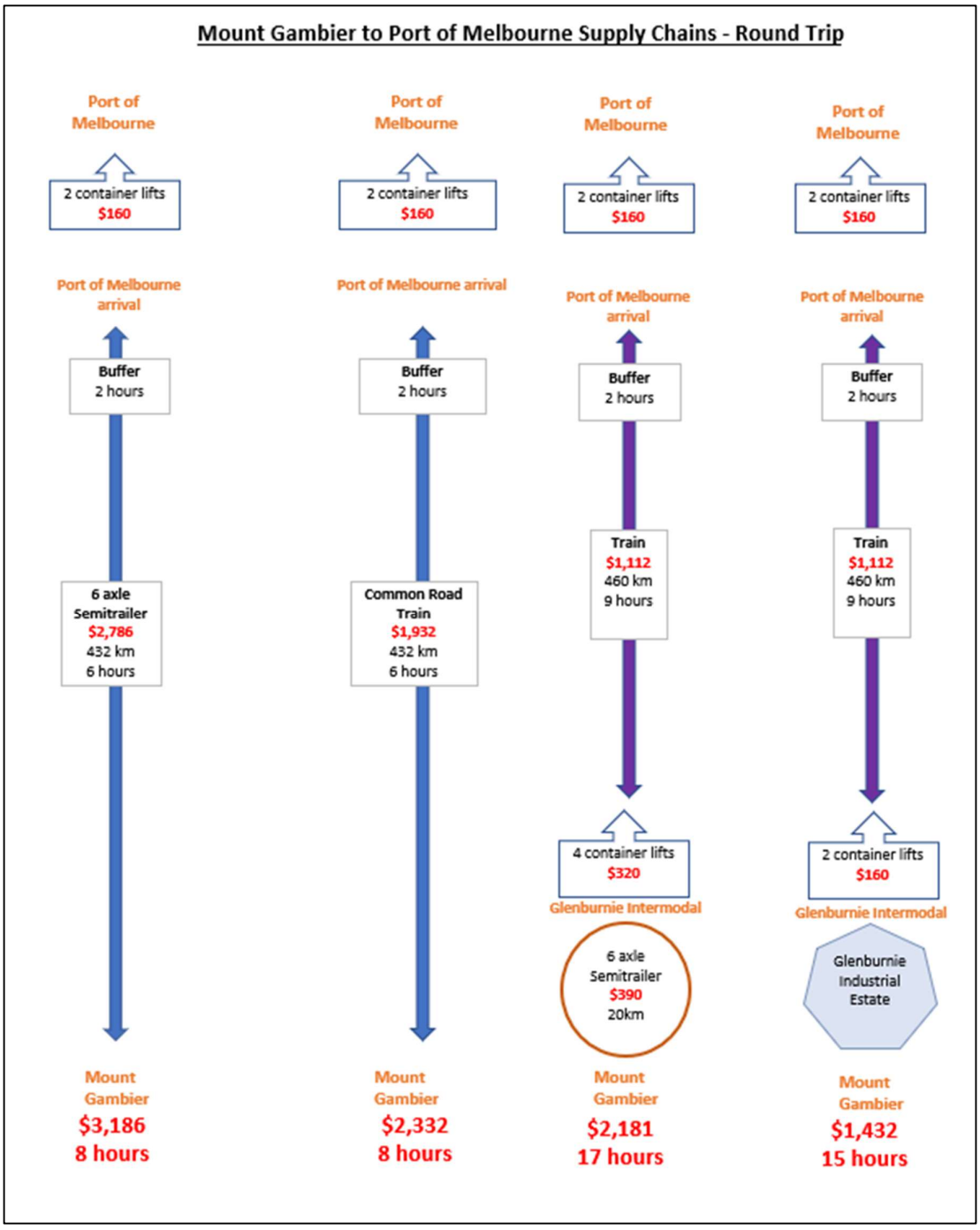

Mount Gambier to Port of Melbourne Supply Chains - Round Trip
Port of Melbourne
2 container lifts
$160
Port of Melbourne arrival
Buffer
2 hours
6 axle Semitrailer
$2,786
432 km
6 hours
Mount Gambier
$3,186
8 hours
Port of Melbourne
2 container lifts
$160
Port of Melbourne arrival
Buffer
2 hours
Common Road Train
$1,932
432 km
6 hours
Mount Gambier
$2,332
8 hours
Port of Melbourne
2 container lifts
$160
Port of Melbourne arrival
Buffer
2 hours
Train
$1,112
460 km
9 hours
4 container lifts
$320
Glenburnie Intermodal
6 axle Semitrailer
$390
20km
Mount Gambier
$2,181
17 hours
Port of Melbourne
2 container lifts
$160
Port of Melbourne arrival
Buffer
2 hours
Train
$1,112
460 km
9 hours
2 container lifts
$160
Glenburnie Intermodal
Glenburnie Industrial Estate
Mount Gambier
$1,432
15 hours

Figure 23

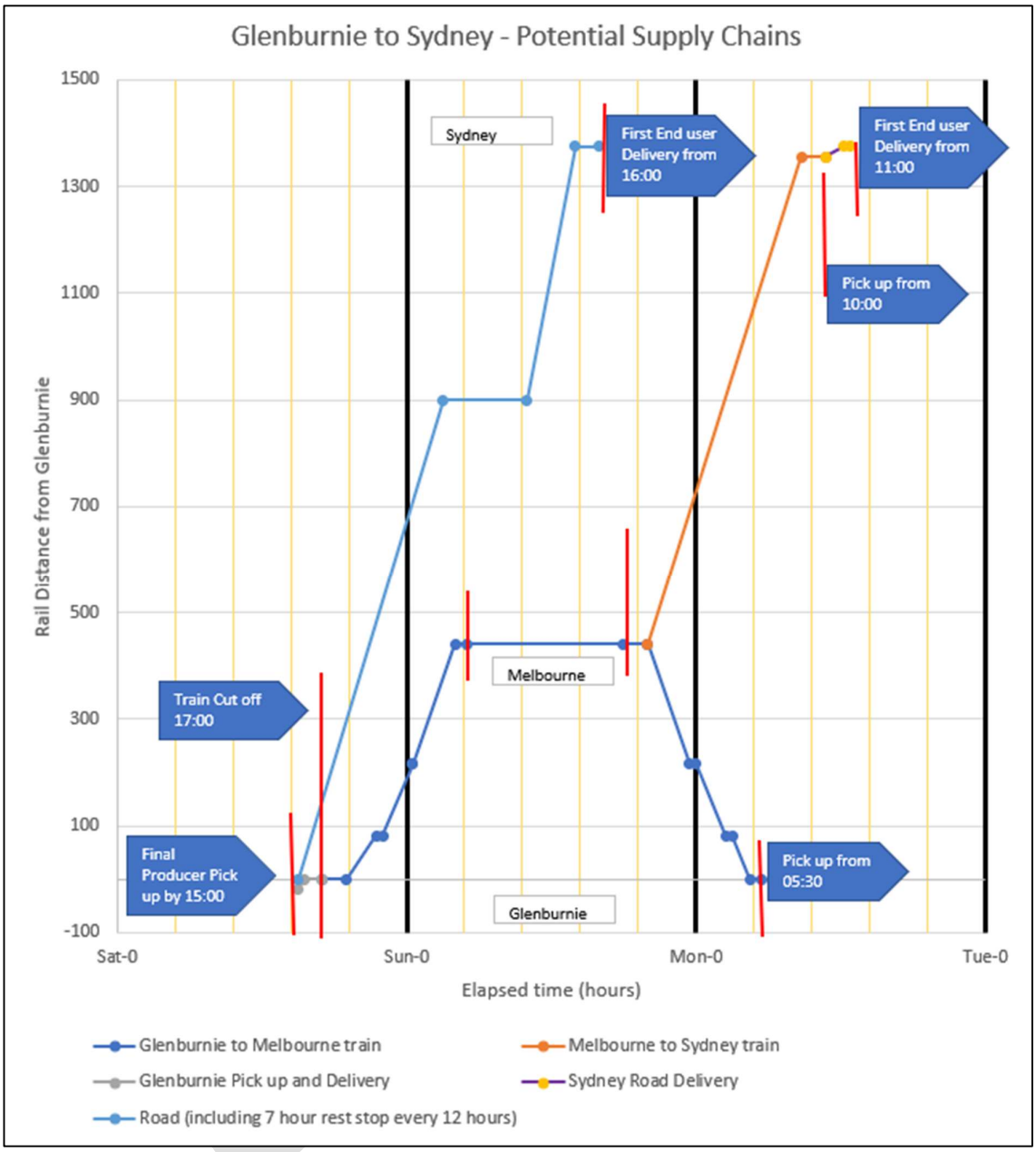

Glenburnie to Sydney - Potential Supply Chains
Rail Distance from Glenburnie
1500
1300
1100
900
700
500
300
100
-100
Sydney
Melbourne
Glenburnie
First End user Delivery from 16:00
First End user Delivery from 11:00
Pick up from 10:00
Train Cut off 17:00
Final Producer Pick up by 15:00
Pick up from 05:30
Sat-0
Sun-0
Mon-0
Tue-0
Elapsed time (hours)
Glenburnie to Melbourne train
Melbourne to Sydney train
Glenburnie Pick up and Delivery
Sydney Road Delivery
Road (including 7 hour rest stop every 12 hours)

Figure 24

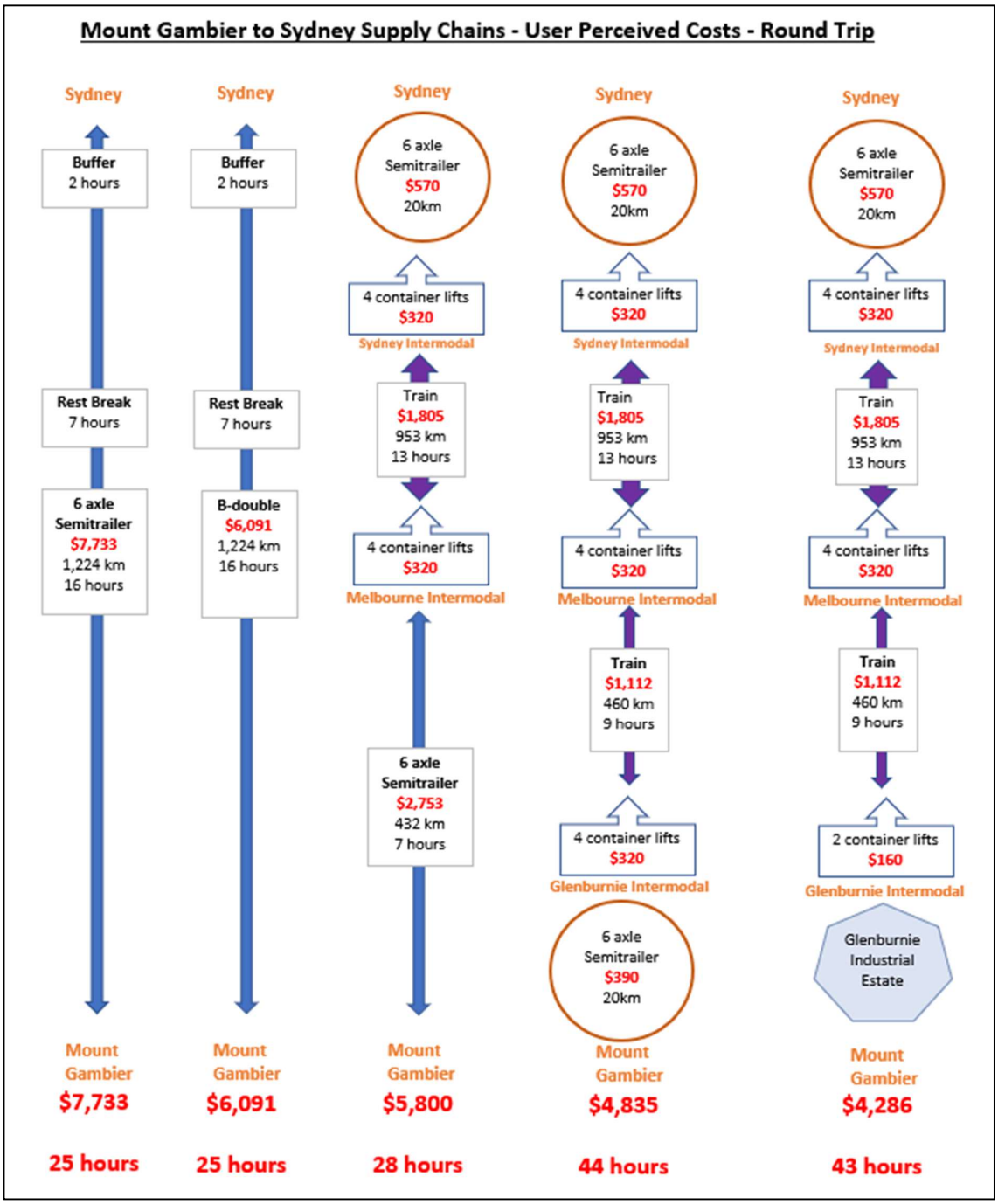

Mount Gambier to Sydney Supply Chains - User Perceived Costs - Round Trip
Sydney
Buffer
2 hours
Rest Break
7 hours
6 axle
Semitrailer
$7,733
1,224 km
16 hours
Mount
Gambier
$7,733
25 hours
Sydney
Buffer
2 hours
Rest Break
7 hours
B-double
$6,091
1,224 km
16 hours
Mount
Gambier
$6,091
25 hours
Sydney
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Sydney Intermodal
Train
$1,805
953 km
13 hours
4 container lifts
$320
Melbourne Intermodal
6 axle
Semitrailer
$2,753
432 km
7 hours
Mount
Gambier
$5,800
28 hours
Sydney
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Sydney Intermodal
Train
$1,805
953 km
13 hours
4 container lifts
$320
Melbourne Intermodal
Train
$1,112
460 km
9 hours
4 container lifts
$320
Glenburnie Intermodal
6 axle
Semitrailer
$390
20km
Mount
Gambier
$4,835
44 hours
Sydney
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Sydney Intermodal
Train
$1,805
953 km
13 hours
4 container lifts
$320
Melbourne Intermodal
Train
$1,112
460 km
9 hours
2 container lifts
$160
Glenburnie Intermodal
Glenburnie
Industrial
Estate
Mount
Gambier
$4,286
43 hours

Figure 25

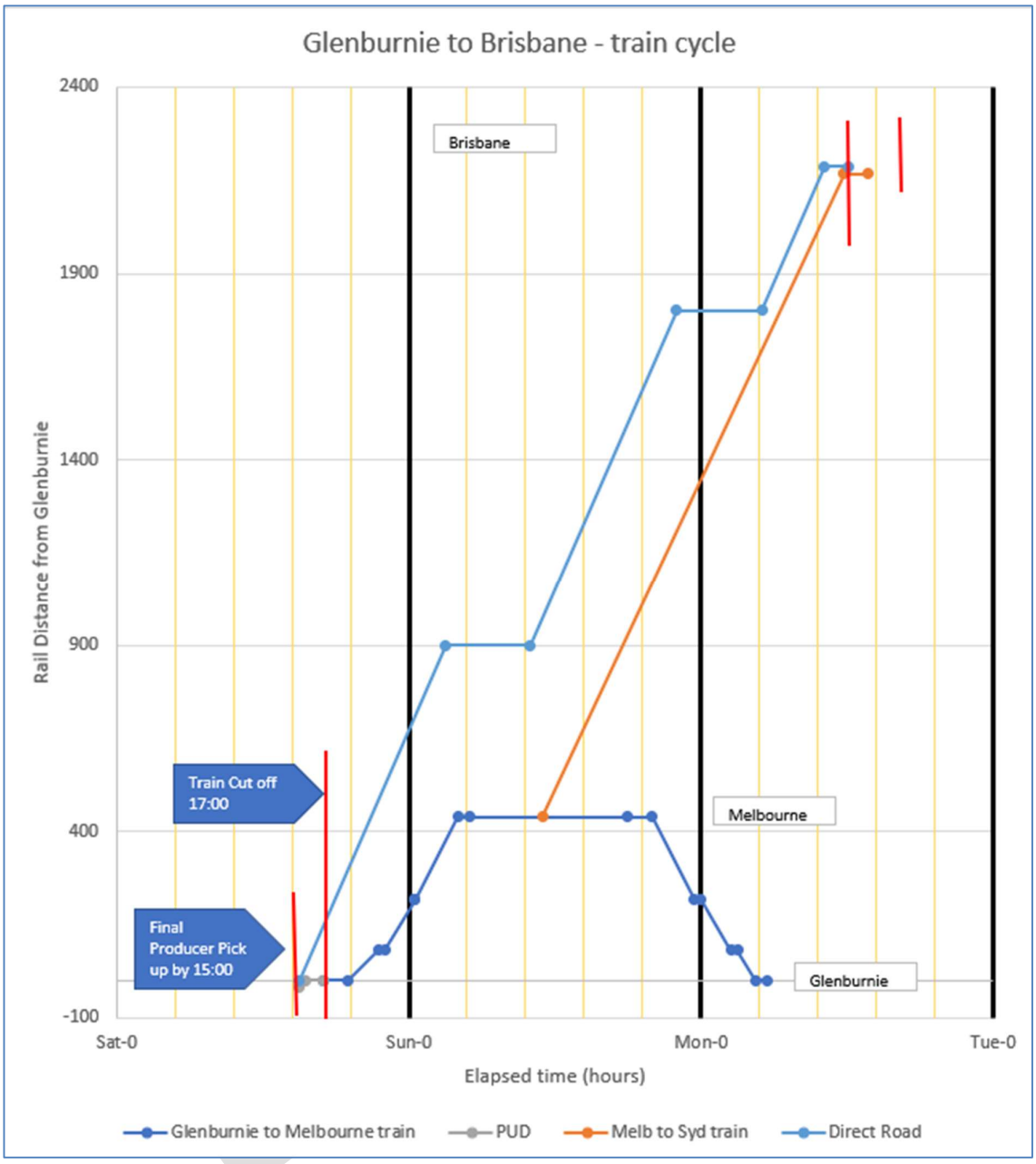

Glenburnie to Brisbane - train cycle
2400
1900
1400
900
400
-100
Rail Distance from Glenburnie
Brisbane
Melbourne
Glenburnie
Train Cut off
17:00
Final
Producer Pick
up by 15:00
Sat-0
Sun-0
Mon-0
Tue-0
Elapsed time (hours)
Glenburnie to Melbourne train
PUD
Melb to Syd train
Direct Road

Figure 26

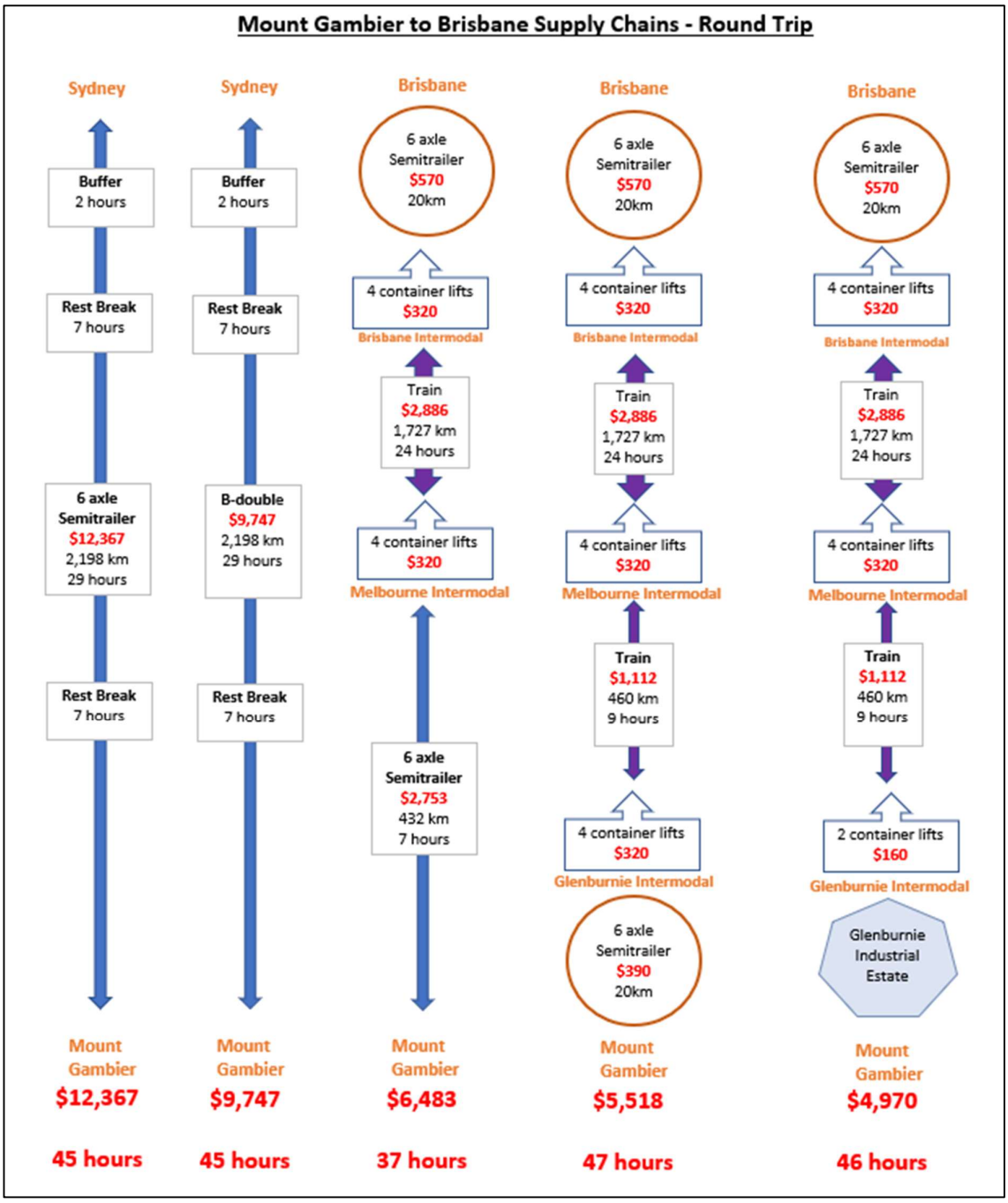

Mount Gambier to Brisbane Supply Chains - Round Trip
Sydney
Buffer
2 hours
Rest Break
7 hours
6 axle
Semitrailer
$12,367
2,198 km
29 hours
Rest Break
7 hours
Mount
Gambier
$12,367
45 hours
Sydney
Buffer
2 hours
Rest Break
7 hours
B-double
$9,747
2,198 km
29 hours
Rest Break
7 hours
Mount
Gambier
$9,747
45 hours
Brisbane
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Brisbane Intermodal
Train
$2,886
1,727 km
24 hours
4 container lifts
$320
Melbourne Intermodal
6 axle
Semitrailer
$2,753
432 km
7 hours
Mount
Gambier
$6,483
37 hours
Brisbane
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Brisbane Intermodal
Train
$2,886
1,727 km
24 hours
4 container lifts
$320
Melbourne Intermodal
Train
$1,112
460 km
9 hours
4 container lifts
$320
Glenburnie Intermodal
6 axle
Semitrailer
$390
20km
Mount
Gambier
$5,518
47 hours
Brisbane
6 axle
Semitrailer
$570
20km
4 container lifts
$320
Brisbane Intermodal
Train
$2,886
1,727 km
24 hours
4 container lifts
$320
Melbourne Intermodal
Train
$1,112
460 km
9 hours
2 container lifts
$160
Glenburnie Intermodal
Glenburnie
Industrial
Estate
Mount
Gambier
$4,970
46 hours

Figure 27

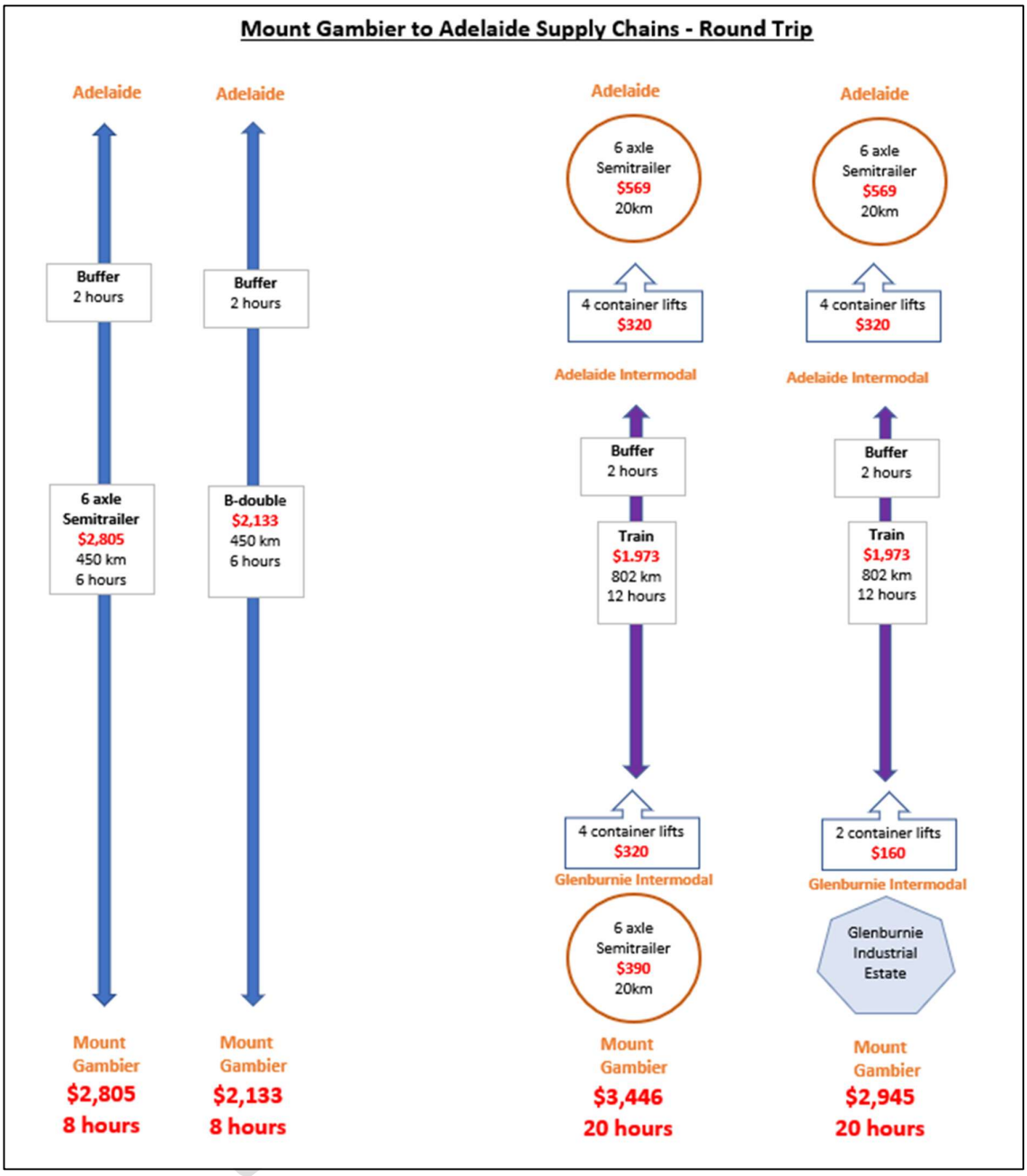

Mount Gambier to Adelaide Supply Chains - Round Trip
Adelaide
Buffer
2 hours
6 axle
Semitrailer
$2,805
450 km
6 hours
Mount
Gambier
$2,805
8 hours
Adelaide
Buffer
2 hours
B-double
$2,133
450 km
6 hours
Mount
Gambier
$2,133
8 hours
Adelaide
6 axle
Semitrailer
$569
20km
4 container lifts
$320
Adelaide Intermodal
Buffer
2 hours
Train
$1,973
802 km
12 hours
4 container lifts
$320
Glenburnie Intermodal
6 axle
Semitrailer
$390
20km
Mount
Gambier
$3,446
20 hours
Adelaide
6 axle
Semitrailer
$569
20km
4 container lifts
$320
Adelaide Intermodal
Buffer
2 hours
Train
$1,973
802 km
12 hours
2 container lifts
$160
Glenburnie Intermodal
Glenburnie
Industrial
Estate
Mount
Gambier
$2,945
20 hours

Figure 28

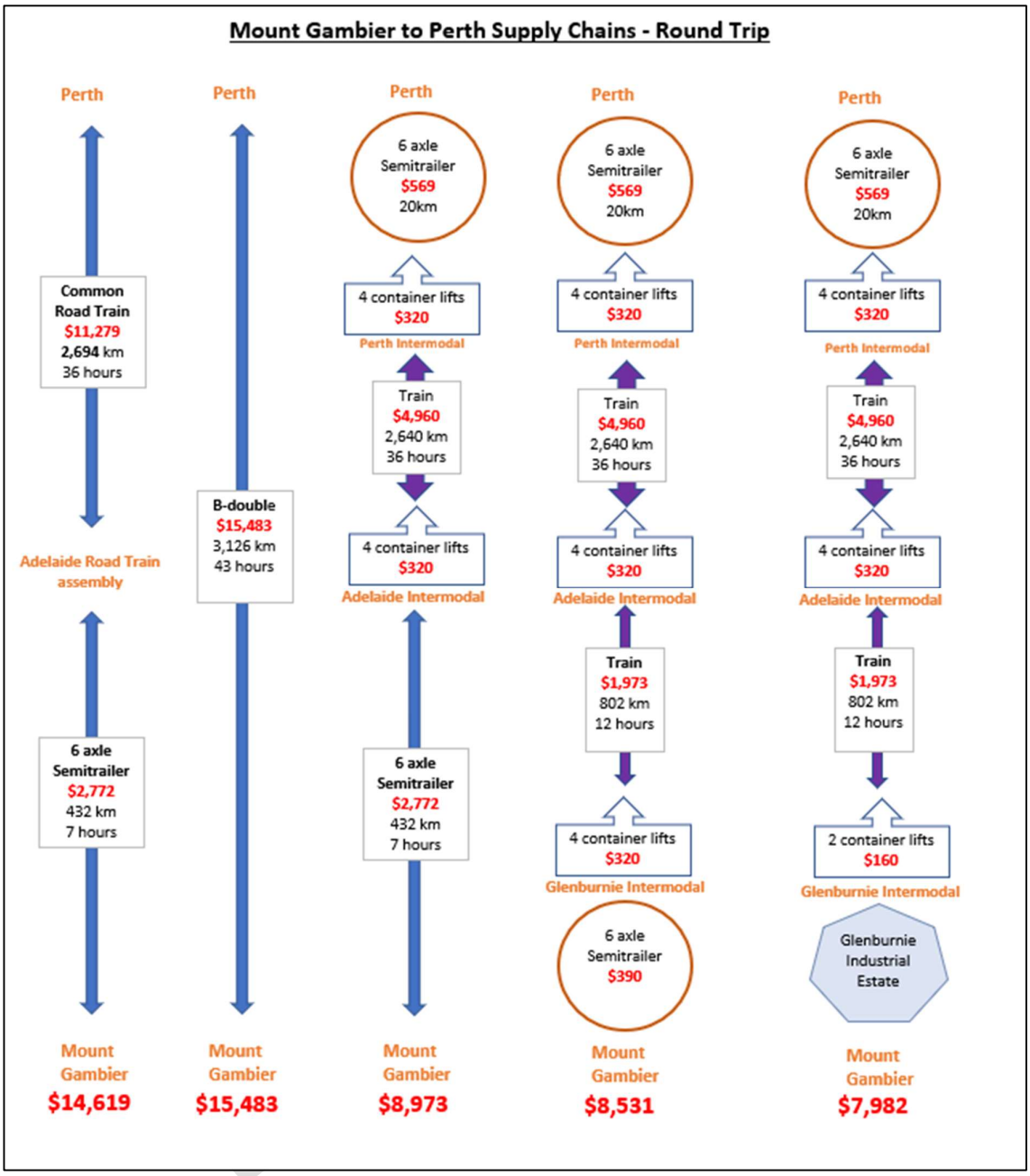

Mount Gambier to Perth Supply Chains - Round Trip
Perth
Common Road Train
$11,279
2,694 km
36 hours
Adelaide Road Train assembly
6 axle Semitrailer
$2,772
432 km
7 hours
Mount Gambier
$14,619
Perth
B-double
$15,483
3,126 km
43 hours
Mount Gambier
$15,483
Perth
6 axle Semitrailer
$569
20km
4 container lifts
$320
Perth Intermodal
Train
$4,960
2,640 km
36 hours
4 container lifts
$320
Adelaide Intermodal
6 axle Semitrailer
$2,772
432 km
7 hours
Mount Gambier
$8,973
Perth
6 axle Semitrailer
$569
20km
4 container lifts
$320
Perth Intermodal
Train
$4,960
2,640 km
36 hours
4 container lifts
$320
Adelaide Intermodal
Train
$1,973
802 km
12 hours
4 container lifts
$320
Glenburnie Intermodal
6 axle Semitrailer
$390
Mount Gambier
$8,531
Perth
6 axle Semitrailer
$569
20km
4 container lifts
$320
Perth Intermodal
Train
$4,960
2,640 km
36 hours
4 container lifts
$320
Adelaide Intermodal
Train
$1,973
802 km
12 hours
2 container lifts
$160
Glenburnie Intermodal
Glenburnie Industrial Estate
Mount Gambier
$7,982

Figure 29

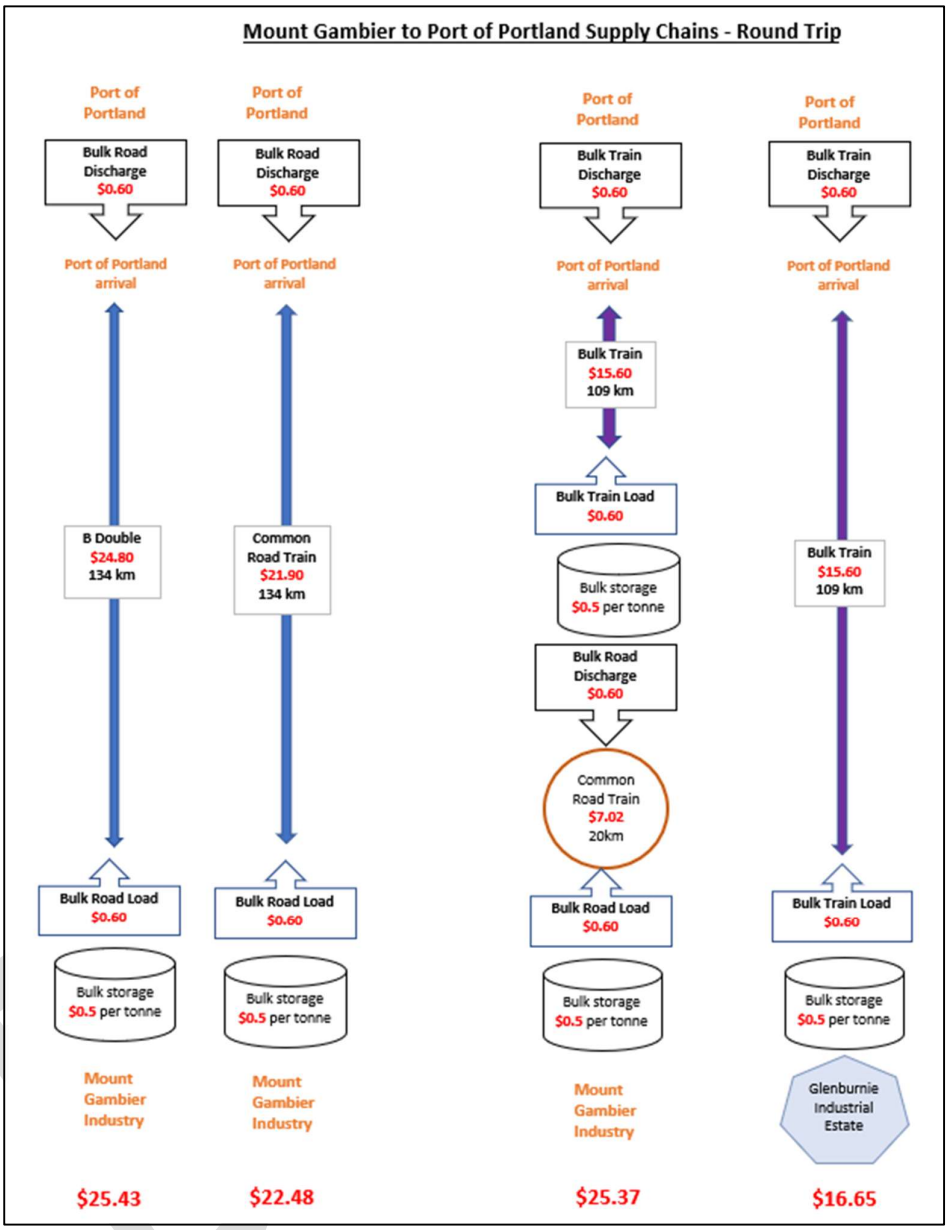


Figure 30

Question
Do the transport supply chains and their costs appear to be reasonable?

Question 11

Question
What road vehicle type splits should be assumed for the supply chains?

Question 12

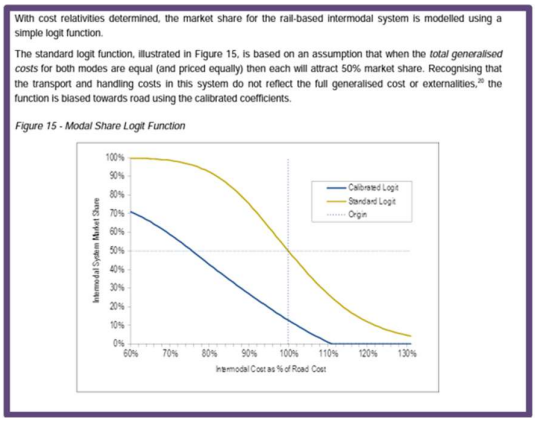
10. Supply Chain Choice

With the estimated freight flows and the assumed set of Supply chains for each freight flow a theoretical estimate of what might the split between each of the supply chains needs to be made.

10.1 Determine an appropriate Logistics curve

Technical Paper 7 considers a methodology to determine the supply chain choice called the Logistics curve (also called Logit curves in the literature). Logistics curves are used extensively in many industries and marketing analysis including urban passenger transport modelling such as when people choose which road to travel to work on, and the use of public transport.

For freight projects there is very limited information with one example shown in Figure 31 prepared by *Strategic design + Development* as part of a study for the Department of Transport Victoria in 2008.[24].


With cost relativities determined, the market share for the rail-based intermodal system is modelled using a simple logit function.

The standard logit function, illustrated in Figure 15, is based on an assumption that when the *total generalised costs* for both modes are equal (and priced equally) then each will attract 50% market share. Recognising that the transport and handling costs in this system do not reflect the full generalised cost or externalities,[2] the function is biased towards road using the calibrated coefficients.

Figure 15 - Modal Share Logit Function

Figure 31

There are some examples of the mode split:-

- Melbourne to Sydney 2%[25]
- Adelaide to Perth 85%
- Estimates for the Melbourne to Brisbane via Inland Rail corridor – 53% in 2029 up from 29% for the current coastal route[26]
- Information is also available from the Australian Rail Track Corporation[27] regarding door to door freight costs and market share.

Figure 32 shows the Logistics curve used in the Glenburnie Intermodal Business Case with the yellow stars showing the current estimated or projected market shares.

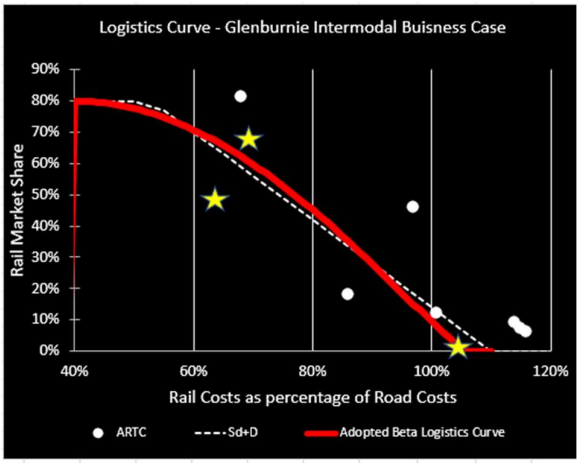


Figure 32

[24] Sd+D - Melbourne Intermodal System Study Report for the Department of Transport, Victoria June 2008

[25] The Guardian on line news 29 Jan 2023

[26] Australian Rail Track Corporation - INLAND RAIL IMPLEMENTATION GROUP REPORT TO THE AUSTRALIAN GOVERNMENT ATTACHMENT A: ARTC 2015 INLAND RAIL PROGRAMME BUSINESS CASE – Table 7.2

[27] ARTC 2008----2024 Interstate and Hunter Valley Rail Infrastructure Strategy 30 June 2008

Question
If Rail supply chain costs are the same as Road, what proportion of freight might be considered for transport by rail?

Question 13

Question
If Rail supply chain costs are 20% lower than Road costs, what proportion of freight might be considered for transport by rail?

Question 14

10.2 Determine the market share for each supply chain

Table 14, Table 15 and Table 16 show the estimated market share for each of the supply chains based on the supply chain costs and the assumed Logistics curve. The 2027 mode split for the base case remains unchanged and is not shown.

Current Freight task - Mode Split - Base Case							
	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	20%	50%	20%	20%	20%	20%	0%
B-double for complete supply chain	80%	0%	80%	80%	80%	0%	80%
Common Road Train for complete supply chain	0%	50%	0%	0%	0%	0%	20%
Road to Melbourne or Adelaide and then transfer to train if applicable	0%	0%	0%	0%	0%	80%	0%
Glenburnie Train	0%	0%	0%	0%	0%	0%	0%

Table 14

Current Freight Task - Mode Split - Project Case							
All	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	20%	20%	5%	3%	20%	5%	0%
B-double for complete supply chain	80%	0%	48%	19%	80%	0%	80%
Common Road Train for complete supply chain	0%	50%	0%	0%	0%	0%	20%
Road to Melbourne or Adelaide and then transfer to train if applicable	0%	0%	0%	0%	0%	75%	0%
Glenburnie Train	0%	30%	47%	78%	0%	20%	0%

Table 15

Increased Estimated Freight Task (no pulp Mill) - Mode Split - Project Case							
All but Glenburnie Industrial Estate	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	20%	20%	5%	3%	20%	5%	0%
B-double for complete supply chain	80%	0%	48%	19%	80%	0%	80%
Common Road Train for complete supply chain	0%	50%	0%	0%	0%	0%	20%
Road to Melbourne or Adelaide and then transfer to train if applicable	0%	0%	0%	0%	0%	75%	0%
Glenburnie Train	0%	30%	47%	78%	0%	20%	0%
Glenburnie Industrial Estate	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	11%	8%	4%	3%	20%	4%	0%
B-double for complete supply chain	80%	0%	34%	15%	80%	0%	27%
Common Road Train for complete supply chain	0%	16%	0%	0%	0%	0%	16%
Road to Melbourne or Adelaide and then transfer to train if applicable	0%	0%	0%	0%	0%	67%	0%
Glenburnie Train	9%	76%	62%	82%	0%	29%	57%

Table 16

10.3 Determine the freight volume split for each supply chain

Table 17, Table 18, Table 19 and Table 20 show the estimated distribution of 40 foot trailers and containers, and Tonnes for the Port of Portland based on the calculated modal split.

Current Freight Task - BASE CASE - 40 ft trailers and containers or Tonnes for Portland							
	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from	4,763	1,553	2,244	362	2,369	275	-
B-double for complete supply chain	19,051	-	8,975	1,449	9,476	-	1,164,231
Common Road Train for complete supply chain	-	1,553	-	-	-	-	291,058
Road to Melbourne or Adelaide and then	-	-	-	-	-	1,098	-
Glenburnie Train	-	-	-	-	-	-	-
TOTAL	23,814	3,107	11,219	1,811	11,845	1,373	1,455,289

Table 17

Current Freight task - PROJECT CASE - 40 foot trailers and containers or Tonnes for Portland							
	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	4,465	594	561	48	2,221	64	-
B-double for complete supply chain	17,861	-	5,042	327	8,884	-	1,164,231
Common Road Train for complete supply chain	-	1,519	-	-	-	-	291,058
Road to Melbourne or Adelaide and then transfer to train if applicable	-	-	-	-	-	970	-
Glenburnie Train	-	925	4,915	1,323	-	253	-
Glenburnie Industrial							
TOTAL	22,326	3,037	10,518	1,698	11,105	1,287	1,455,289

Table 18

Increased Estimated Freight Task (no pulp Mill) - BASE CASE - 40 foot trailers and containers or Tonnes for Portland							
	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	6,263	1,800	3,138	549	3,301	380	-
B-double for complete supply chain	25,051	-	12,551	2,198	13,206	-	934,149
Common Road Train for complete supply chain	-	1,800	-	-	-	-	233,537
Road to Melbourne or Adelaide and then transfer to train if applicable	-	-	-	-	-	1,520	-
Glenburnie Train	-	-	-	-	-	-	-
TOTAL	31,313	3,600	15,689	2,747	16,507	1,900	1,167,687

Table 19

Increased Estimated Freight Task (no pulp Mill) - PROJECT CASE - 40 foot trailers and containers or Tonnes for Portlan							
	Melbourne	Port of Melbourne	Sydney	Brisbane	Adelaide	Perth	Portland (Tonnes)
6 axle Semitrailer (including Common Road Train from Adelaide to Perth if applicable)	5,864	646	806	76	3,298	93	-
B-double for complete supply chain	25,051	-	7,223	515	13,205	-	828,379
Common Road Train for complete supply chain	-	1,627	-	-	-	-	226,057
Road to Melbourne or Adelaide and then transfer to train if applicable	-	-	-	-	-	1,410	-
Glenburnie Train	-	944	6,310	1,843	-	321	-
Glenburnie Industrial	399	383	1,350	313	4	76	113,250
TOTAL	31,313	3,600	15,689	2,747	16,507	1,900	1,167,687

Table 20

Question
Do these mode splits seem reasonable?

Question 15

11. Resource Cost and Externality assessment

After mode selection all costs used are Resource Costs which do not include the profit or risk margins.

This section also considers the impacts of the change in freight task on third parties and transport network providers.

- Safety
- Environment and
- Transport Network Damage

Technical Paper 8 contains the detailed analysis of the externality impacts

Table 21 is the summary of the annual resource and externality costs. The values shown in green are used directly in the economic calculation.

Resource and impact Costs ($ millions)	Road Operator Costs	Glenburnie Train Operations Cost	Glenburnie Intermodal Cost	Other Intermodal Cost	Other rail Operator Costs	Road User Charge (27.2 cents per litre)	ARTC Access Fees	TOTAL perceived producer costs	Total Resource Costs (exclude transfers)	Safety	Environment	Road damage costs	Rail Track damage costs
Current Freight - Base Case	$ 173	$ -	$ -	$ 1	$ 4	$ 13	$ 1	$ 191	$ 178	$ 10	$ 8	$ 15	$ 0
Current Freight - project case	$ 135	$ 7	$ 3	$ 6	$ 13	$ 9	$ 4	$ 177	$ 163	$ 8	$ 6	$ 11	$ 2
Increased Freight Base case	$ 272	$ -	$ -	$ 2	$ 7	$ 23	$ 2	$ 306	$ 281	$ 16	$ 12	$ 24	$ 1
Increased Freight project case	$ 189	$ 17	$ 5	$ 11	$ 25	$ 16	$ 8	$ 270	$ 247	$ 11	$ 9	$ 17	$ 4
Current Freight less cost reduction due to project	$ (38)	$ 7	$ 3	$ 4	$ 9	$ (3)	$ 3	$ (14)	$ (14.3)	$ (2.2)	$ (1.2)	$ (4.1)	$ 1.8
Increased Freight less Cost reduction due to project	$ (84)	$ 17	$ 5	$ 10	$ 18	$ (7)	$ 6	$ (35)	$ (34.1)	$ (4.5)	$ (3.0)	$ (7.8)	$ 2.7

Table 21

Further information is available in Technical Paper 8 which is summarized below.

If the project does not proceed the following are estimated to be the annual impact:-

- Freight costs will rise from $177 million to $237 million (+$60 million)
- Road vehicle kilometres will rise from 58 million to 78 million (+20 million)
- Accident costs will rise from $9 million to $12 million
- Environmental impacts will increase from $7 million to $10 million
- Transport network damage costs (road and rail) will rise from $14 million to $20 million

If the project does proceed by the time the freight task has increased then the annual reduction in impacts from that time will be:-

- Freight costs - $25 million
- Road vehicle kilometres - 23 million kilometres

- Accident costs - $3 million
- Environmental impacts - $2 million
- Transport Network damage costs (road and rail) - $3 million

12. Investment

12.1 Operating Specification

The Project Case assumes the following operational performance:-

- An Intermodal terminal developed at Glenburnie, eight kilometres to the east of Mount Gambier
- The railway between Glenburnie and Heywood will be reinstated to allow operation with standard mainline locomotives with 23 Tonne axle loads and freight wagons of at least 21 Tonne axle loads with a maximum trip time of around 1.5 hours and up to 23 tonne axle loads at a reduced speed.
- Train length will be limited to a maximum of 820 metres due to constraints at Maroona
- Intermodal train services would start at three return services a week to Melbourne, including to the Port of Melbourne, connecting with other interstate train services and increase to around 6 to 7 trains a week.
- Bulk train services between Glenburnie and the Port of Portland would be dependent on demand.

12.2 Assumed Scope

To achieve the operational performance specific scopes of works have been identified:

- Clear the 81 kilometres long Glenburnie to Heywood corridor of trees and vegetation including establishment of access tracks and ensuring line of sight requirements are met at level crossings.
- Replace all existing timber sleepers with low profile prestressed concrete sleepers
- Either weld the existing rail or use surplus Australian Rail Track Corporation 47 kg/m rail
- Install new active level crossing protection at 6 level crossings
- Connect the Glenburnie to Heywood line at Heywood to the existing Australian Rail Track Corporation's Maroona to Portland line
- Construct a new cycle path at Dartmoor
- Construct an intermodal facility at Glenburnie including two additional tracks and crushed rock hardstand

Figure 33

- Undertake any work required on the Dartmoor bridge

Figure 34

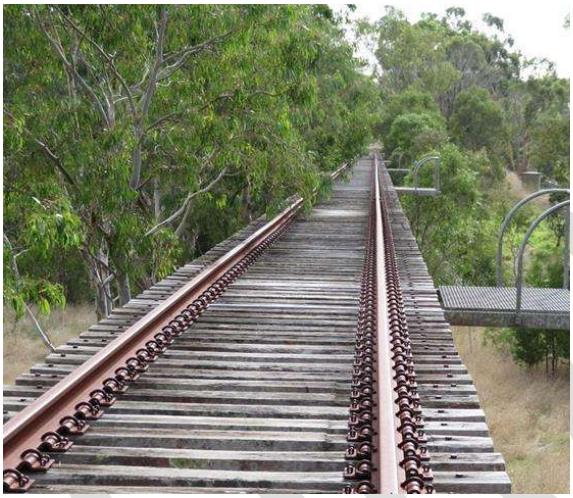


Figure 35

12.3 2024 revised estimate

The 2022 estimate for the project was $130 million and it assumed that this would be based on late 2021 costs.

There has been an estimated 26% increase in costs based on the latest Australian Bureau of Statistics for Road and Bridge Construction in Victoria from the December 2021 Quarter to the December 2024 Quarter[28].

A simple escalation of the estimate indicates a revised 2024 cost of $154 million. This does not include any future cost escalation which is dependent on project timing which is unknown at this stage.

12.4 Cost check

Two cost checks have been undertaken on the project based on recent costs for the Maroona to Portland line track upgrade and the Kenwick Intermodal facility in Western Australia.

The 2024 budget announcement by the Australian Government to upgrade the Maroona to Portland railway is understood to comprise:-

- $150 million investment over three years between 2024/25 to 2026/27
- The investment is assumed to include a risk allowance for price escalation over the three years and all overheads, project management, design and contractor profit margins.
- The track to be upgraded is 172 kilometres in length
- This implies an average cost of $872,000 per track kilometre

The average cost of the upgrade of the 81 kilometre long Heywood to Glenburnie rail line, including overheads, on costs and contingencies is $1,260,000 per track kilometre.

Based on this comparison the track upgrade estimate for Heywood to Glenburnie appears adequate.

[28] 6427.0 Producer Price Indexes, Australia Table 17. Output of the Construction industries, subdivision and class index numbers

The second cost check is the Kenwick Intermodal Terminal near Perth which opened in December 2024 at a reported cost of $25 million.

The Kenwick Intermodal terminal is a more substantial terminal with a larger and deep asphalt hardstand compared to that that proposed for the $16 million Glenburnie Intermodal Terminal which is a lower cost crushed rock design.

The escalated cost estimate of the Glenburnie Intermodal terminal including all on costs, contingencies and escalation is $16 million.

Based on this comparison the estimate for the Glenburnie Intermodal Terminal appears adequate.

Given the above discussion a December 2024 cost estimate for the Glenburnie to Heywood project of $160 million has been assumed.

Question
Is the proposed track reinstatement, using low profile prestressed concrete sleepers and either welded 80 pound per yard or surplus Australian Rail Track Corporation 47 kg per metre rail appropriate for the operating parameters? What speed would be allowed?

Question 16

Question
Are recent project scopes and costs available to be considered as benchmarks for the railway reinstatement and intermodal development?

Question 17

13. Economic Analysis

Economic assessment is a formal process to compare a stream of future benefits against an investment cost and should only consider resource costs.

It is not a financial assessment as factors such as cost escalation, interest, depreciation and transfer costs such as taxes are not considered.

The economic assessment is based on the following assumptions.

- **Real discount rate:**
  - 7% for main central analysis
- **Construction period:**
  - Construction over three years commencing in 2026. The re-activated rail line to be fully operational by early 2028.
- **Freight ramp up**

- It has been assumed that the freight task will ramp up over a five-year period between 2027 and 2032. This assumes that there is a four-year period to undertake statutory land use changes, planning approvals and construction.

- **Appraisal period:**
  - 50 years
- **Investment cost:**
  - Capital costs of $150 million in the Project Case.
  - Rerailing costs with 50 kg/m rail of $30 million are included in year 30
  - There are no base case costs
- **Recurrent costs**

The recurrent costs for the proposal are:-

- Train operating costs
- Intermodal operating costs
- Pickup and delivery costs
- Rail track maintenance costs

- **Asset (economic) life:**
  - As the rail is assumed to be replaced in year 30, the residual value of the rail is included in year 51 as it has a potential life until year 100.
- **Benefits from Freight Cost Reduction**
  - In determining the benefits to existing and future users of freight services who switch from one mode to another, economic theory states that the benefits should be halved, called the "Rule of Half".
  - In simple terms the logic is that the first user gains all the benefits while the last user gains almost no benefit. Overall, this means that the average benefit is ½ hence the term the Rule of Half.
  - This analysis uses the Rule of Half for the benefits from freight cost reduction.

Table 22 summarises the results of the economic analysis.

Benefit Cost ratio - Central Assessment - 7%	Present Value $m
Benefits	
Freight Cost	133
Safety	34
Environmental Externality	21
Reduced Road damage	59
Increased rail track damage	(23)
Residual Value	0.4
Costs	
Construction	114
Year 20 upgrade	8
Results	
Present Value Benefits	224
Present Value Upgrade Costs	8
Present Value Investment Costs	114
Present Value Total Costs	121
Net Present Value	103
Benefit Cost ratio type 1	1.8
Benefit Cost ratio type 2	1.9
Internal Rate of Return	13%

Table 22

The results in Tables 22 show the development of an Intermodal at Glenburnie and the reinstatement of the rail line between Glenburnie and Heywood:

- Appears to be economically justified (with a Net Present Value greater than zero and a Benefit Cost ratio

greater than 1) in the central analysis (7% discount rate and best estimates for input values), with a **Net Present Value of $100 million** and a **Benefit Cost Ratio of around 1.8**

Based on the above results, the initiative could be seen as having an economic justification.

14. Sensitivity Tests / Scenario analysis

Several key sensitivity tests were undertaken.

14.1 Wood product manufacturing

The initial assessment was that wood product manufacturing would rise from 788,000 Tonnes per annum to 1,369,000 tonnes per annum from 2027 to 2032.

This sensitivity test assesses the impact of the total tonnage per annum being:

- Low case – 788,000 Tonnes per annum
- High Case – 1,800,000 Tonnes per annum

The impact of this is:-

- Low Case - The Benefit Cost ratio drops from 1.8 to 1.4
- High Case – The Benefit Cost ratio rises from 1.8 to 2.2

14.2 Glenburnie Industrial Estate development

The initial assessment was that the effect of the Glenburnie Industrial development is that 200,000 tonnes of intermodal freight would have direct access to the intermodal facility removing the need for pickup and delivery as well as the number of container lifts.

This sensitivity test assesses a low value of no industrial development and a high value of 400,000 tonnes.

The impact of this is:-

- Low Case - The Benefit Cost ratio drops from 1.8 to 1.7
- High Case – The Benefit Cost ratio rises from 1.8 to 2.1

14.3 Glenburnie Industrial Estate bulk product

The initial assessment was that the effect of the Glenburnie Industrial development is that 200,000 tonnes of bulk product such as woodchips, pellets or logs would have direct access to the intermodal facility removing the need for pickup and delivery as well as the number of container lifts.

This sensitivity test assesses a low value of no industrial development and a high value of 400,000 tonnes.

The impact of this is:-

- Low Case - The Benefit Cost ratio drops from 1.8 to 1.7
- High Case – The Benefit Cost ratio rises from 1.8 to 2.1

14.4 Proportion of end users within 50 kilometres of destination intermodal

The initial assessment was the 70% of current potential end users were within 50 kilometres of the destination intermodal. The total rail freight was reduced by 25% to cater for that assumption.

This sensitivity test assesses an expected value of 75% a high value of 80%.

The impact of this is:-

- Low Case - The Benefit Cost ratio drops from 1.8 to 1.7

- High Case – The Benefit Cost ratio rises from 1.8 to 2.0

14.5 Combined effect

This section considers the combination on all the above to show the range between a low, expected and high outcome.

Table 23 shows the summary of the sensitivity assumptions and the results:

Glenburnie Intermodal - 2027 onwards sensitivity tests	Current	Expected	High
Wood industry production additional growth (Tonnes)	788,000	1,369,000	1,800,000
Glenburnie industrial estate development linking to rail	-	200,000	400,000
Glenburnie industrial estate development Bulk		200,000	400,000
Destination freight within 50 kilometres of intermodal	70%	75%	80%
Benefit Cost Ratio	1.1	1.8	2.6
Net Present Value	$ 8	$ 103	$ 188
40 foot Containers	7,000	12,000	16,000
Trains per week, assuming 50-40 foot containers per train	3	5	7

Table 23

Figure 36 shows the range and economic outcomes with a possible likelihood.

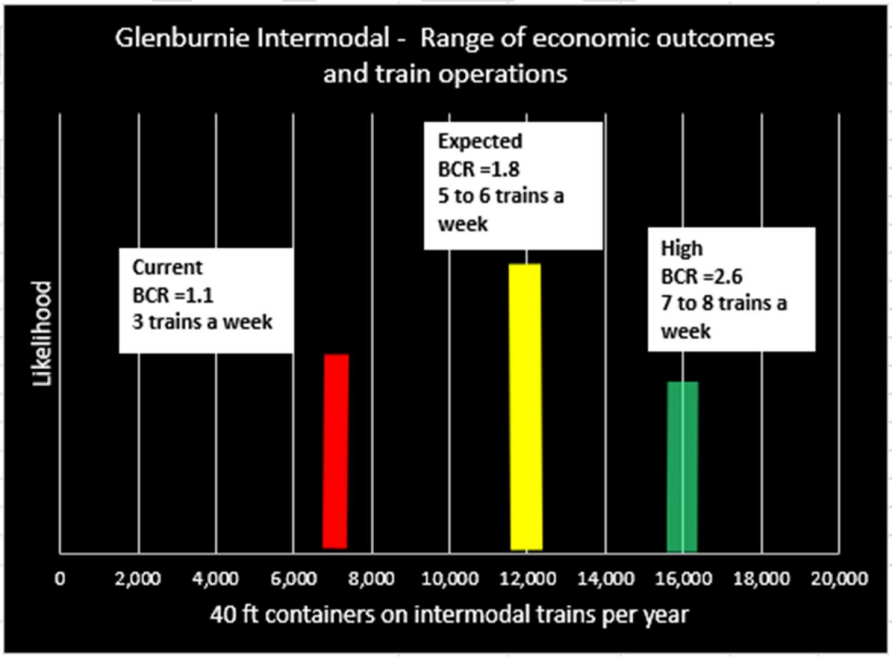


Figure 36

15. Strategic Problem Assessment

The Strategic Problem assessment considers the extent of the impacts that outgoing freight from the catchment of the Glenburnie Intermodal.

Table 24 shows the scale of the strategic problem for the current freight task, and for the increased freight task scenario.

Strategic Problem Assessment - $ million per annum						
	Freight Transport Cost	Safety	Environment	Road damage costs	Rail Track damage costs	Total
Current Freight - Base Case	$ 14	$ 9	$ 7	$ 15	$ 0	$ 46
Increased Freight Base case	$ 24	$ 12	$ 10	$ 19	$ 1	$ 67

Table 24

Table 25 shows the effect of the Glenburnie Intermodal in reducing the size of the Strategic Problem.

Strategic Problem Reduction Assessment - $ million per annum							
	Freight Transport Cost	Safety	Environment	Road damage costs	Rail Track damage costs	Total	Effecitve reduction of strategic problem
Current Freight	$ 14	$ 2	$ 1	$ 4	$ (2)	$ 19	$ 26
Increased Freight	$ 24	$ 3	$ 2	$ 6	$ (2)	$ 33	$ 34

Table 25

16. Non Monetised Impacts

Table 26 shows a key non monetized impact that has been considered so far is direct employment.

Impact on Transport Drivers and Operators			
Scenario	Total Transport Drivers and Operators	Change from Now	
Current Freight	426		
Increased Freight - no project	522	96	23%
Increased Freight with Glenburnie Intermodal	464	38	9%

Table 26

17. Distributional Analysis

Table 27 shows the distributional impacts for:-

- Customers and Freight Consignors
- Road operators
- Rail operators (Glenburnie train operators and other train operators)
- Intermodal operators (Glenburnie and Others)
- Road authorities (Road User charge less road damage cost)
- Australian Rail Track Corporation (Rail Access fees less rail damage costs)
- Third Party impacts (safety and environment)

Distributional Impact										
Beneficiaries	Customers and Freight consignors	Road and Rail operators					Infrastructure Providers		Third Parties	
	Change in transport costs potentially passed on depending on the competitive structure of the market.	Road Operators	Glenburnie Rail Operator	Glenburnie Intermodal Operator	Other Intermodal operators	Other rail operators	Road Authorities	Australian Rail Track Corporation	Safety	Environment
Increased Freight Base Case compared to Current Freight Base Case	$ 66	$ 57.8	$ -	$ -	$ 0.1	$ 1.7	$ 0.3	$ 0.5	$ 3.2	$ 3.2
Increased Freight - Project Case compared to Current Freight Base Case	$ 41	$ (1.4)	$ 11.3	$ 3.5	$ 7.2	$ 14.9	$ 1.0	$ 2.5	$ 0.2	$ 1.1
Increased Freight - Project Case compared to Increased Freight Base Case	$ (25)	$ (59.2)	$ 11.3	$ 3.5	$ 7.1	$ 13.3	$ 0.7	$ 2.0	$ (3.2)	$ (2.0)

Table 27

Figure 37 shows the change in total perceived costs for freight transport with the increased freight starting in 2027 and complete in 2031 and the impact of the Glenburnie intermodal terminal which totals $25 million per year by 2031.

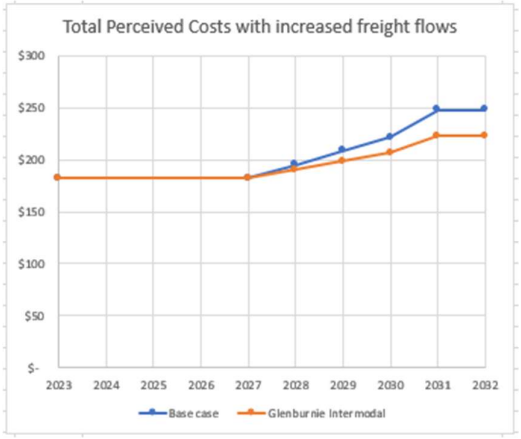


Figure 37

Figure 38 shows the total perceived costs as they change over the five years of assumed freight growth

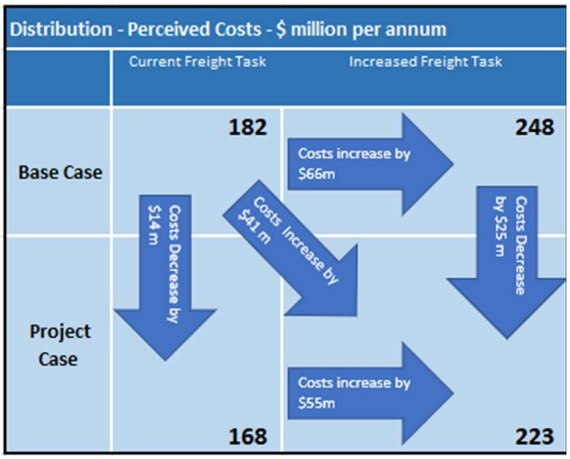


Figure 38

Figure 39 shows the changes in Road Operator costs over the same period and the impact of the Glenburnie intermodal terminal, which shows a decrease of $2 million a year by 2031.

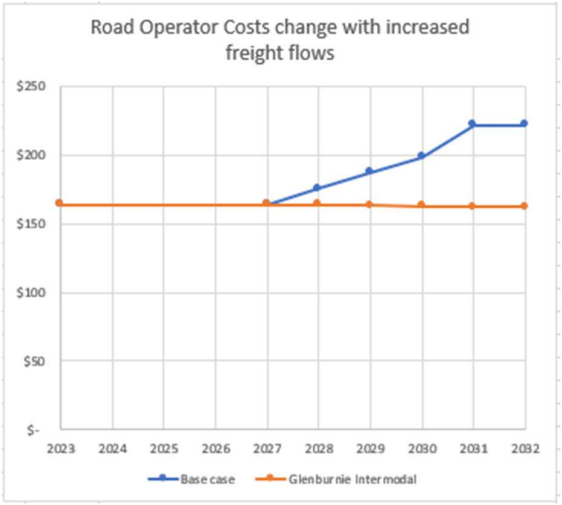


Figure 39

Figure 40 shows the impact on road operator costs as they change over the five years of industry growth.

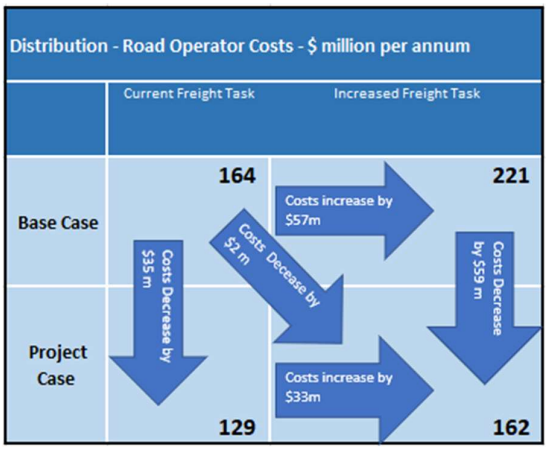


Figure 40

18. Deliverability

There appears to be no significant impediments to the delivery of this initiative

- The rail corridor is available, subject to formal confirmation by the South Australian and Victorian Governments
- The rail assets are available subject to formal confirmation by the South Australian and Victorian Governments

- The key infrastructure bridge asset at Dartmoor was reconstructed in the late 1980's
- Several similar projects have been undertaken recently in Victoria.

The organisations that would deliver the Glenburnie Intermodal has not yet been determined as there are several opportunities that need to be considered at a commercial level before these can be progressed.

Such questions include:-

- Who should own or lease the rail corridor?
- Who should own or lease the intermodal facility?
- Who would be the construction contractor?
- Who would operate the trains?

The issues to be resolved at that stage include:-

- Financial analysis
- Detailed risk assessment
- Any approvals such as environmental or land use planning

19. Summary and conclusions

Assume similar to Executive summary, to be added later

Rail Futures Institute Inc

A0059839B

4 Manor Crescent
Highton Vic 3216
13 June, 2025

Planning and Land Use Services
Attention: Growth Management Team
Department for Housing and Urban Development
GPO Box 1815, ADELAIDE SA 5001
plansa.submissions@sa.gov.au

DRAFT LIMESTONE COAST REGIONAL PLAN

Dear Growth Management Team,

Thank you for the opportunity to comment on the draft Limestone Coast Regional Plan.

It was pleasing to see that the discussion about strategic transport infrastructure included the possible re-introduction of rail transportation from the region to the Port of Portland which would open up a range of export and import options for the Limestone Coast as well as identifying that as a result, passenger and freight rail services across the entire region could be gradually reinstated.

A staged approach in the re-instatement of railway services is supported, starting with the development of an intermodal freight terminal at the proposed industrial precinct at Glenburnie with a reinstated rail line from Glenburnie connecting at Heywood (Victoria) to Portland, Geelong, Melbourne and the ARTC interstate network.

At Heywood the railway would connect to the soon to be upgraded Maroona to Portland railway that has received $150 million from the Australian Government for upgrading works over three years from 2025/26.

To support the case for the restoration of rail freight between Glenburnie and the Port of Portland and the interstate rail network, the Rail Futures Institute has prepared an updated draft outline business case based on earlier work undertaken by the CSIRO and Regional Development Australia Limestone Coast. A copy is attached.

Following the release by Infrastructure SA of South Australia's 20-Year State Infrastructure Strategy 2025 in March 2025 which discusses rail lines in the region, the Rail Futures Institute recommended to Infrastructure Victoria that a similar statement to that contained in the Infrastructure SA strategy form part of their review of Victoria's 30-year strategic infrastructure plan. Coordination with the South Australian and Australian Governments was also recommended.

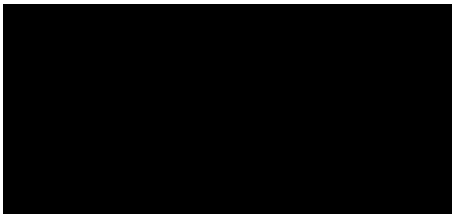
2/...

Having appropriate land use policies in place to support long term railway development and operations is essential, some specific examples being:-

- The proposed industrial precinct at the Glenburnie saleyards and adjacent rail corridor must support and allow for development of an Intermodal Freight Terminal and associated activities.
- The railway infrastructure between Wolseley and the South Australian/Victorian border and between Mount Gambier and Millicent need to be retained and allow for future rail use in relation to:-
    - The easement in the City of Mount Gambier through the railyards between Whel Street and Bay Road.
    - The easement for a realigned rail line on the southern boundary of the One Forty One sawmill.
    - The ability to relocate cycling paths on former rail easements within the City of Mount Gambier and other local government areas in the region.
- The Planning Report prepared for the District Council of Grant by Masterplan dated April 2024 identifies a potential northern road bypass of Mount Gambier. This bypass should also allow for the re-routing of the railway along the same alignment from Glenburnie to Wandilo

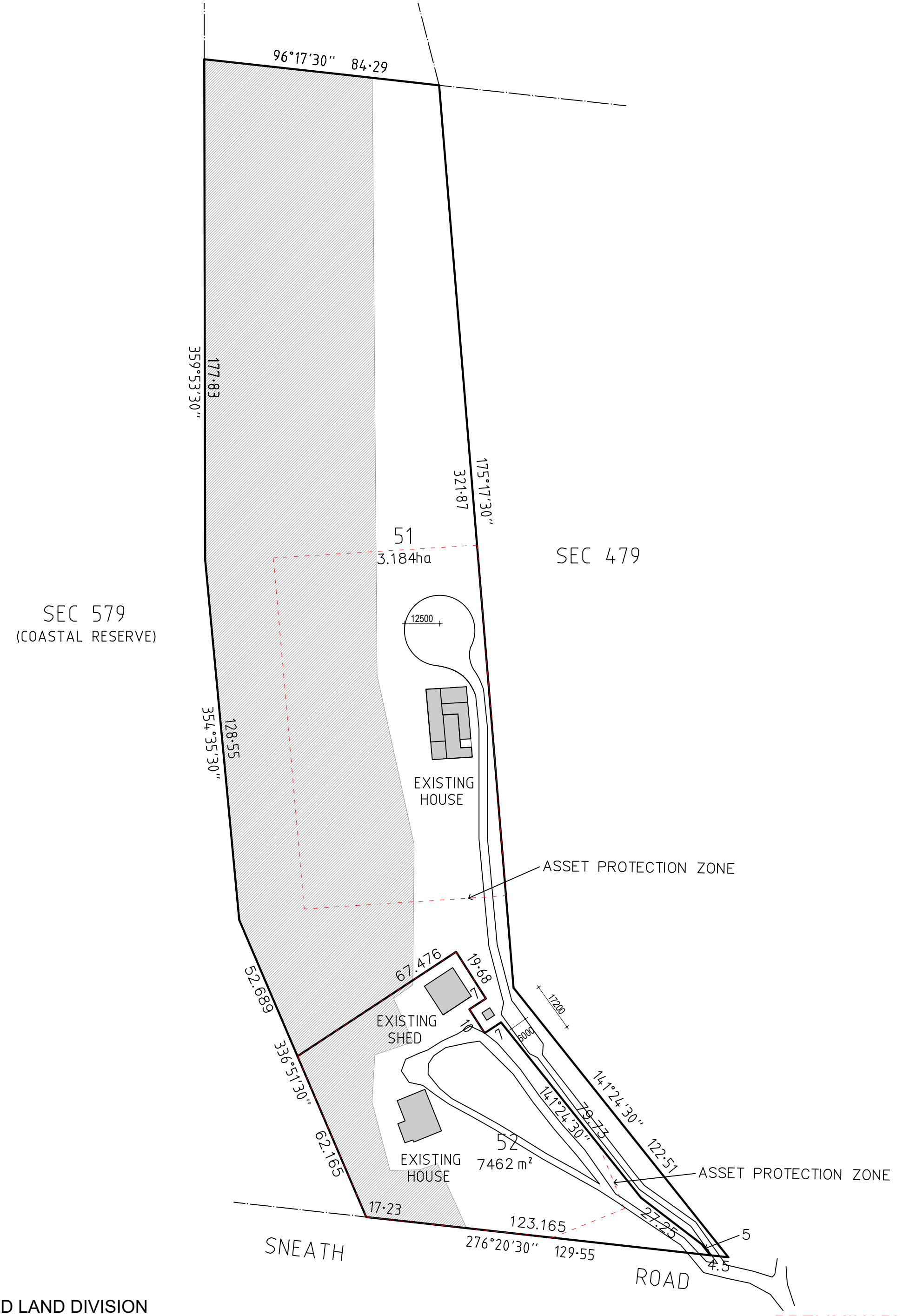
If you have any concerns or questions relating to this letter, please feel free to contact me.

Yours sincerely,



John Hearsch OAM
President, Rail Futures Institute

Mobile: [redacted]
Email: president@railfutures.org.au



PROPOSED LAND DIVISION

1:1250 @ A3

PRELIMINARY

AcroPLAN [SA]

URBAN & REGIONAL PLANNING
BUILDING & URBAN DESIGN
PLANNING ADVICE & FEASIBILITY
PLANNING CERTIFICATION

PO BOX 1243 PASADENA SA 5042
P: +61 (0) 416 839 459
E: acroplansa@gmail.com
ABN # 69 605 956 232

PROJECT - LAND DIVISION

CLIENT - M & C ROBINSON C:/ 47 SNEATH ROAD, MOUNT BENSON SA 5275

REVISION AMENDMENTS

issue	checked	date	rev.
COUNCIL	AC	09/03/2025	D2
COUNCIL	AC	28/09/2024	D1

- Dial 1100 before you dig

PROJECT NORTH

All dimensions shall be checked on site. Any discrepancies shall be reported to the designer for clarification. Written dimensions take precedence over scaled dimensions. These drawings shall be read in conjunction with all associated specifications, documents and reports and the Building Code of Australia (NCC 2022).

SCALE	DRAWN	CHECKED	SIGNED OFF	DATE
1:1250	AC	AC	AC	09/03/2025
ORIG.SIZE	DRAWING NUMBER			REVISION
A3	22-0145.DA.10.01			D2

17 June 2025

Regional Planning Program Team
Planning and Land Use Services
Department for Trade and Investment
GPO Box 1815
Adelaide SA 5001

C/: plansasubmissions@sa.gov.au

Dear To whom it may concern:

RE: Limestone Coast Regional Plan

I write on behalf of Meredith and Charles Robinson, owners of [redacted]. The owners have a property at the edge of the Boatswains Point settlement and it contains two lawfully existing dwellings on the land.

The land is unfortunately zoned within the Conservation Zone. The dwellings have been on site for more than 40 years in the case of the closest dwelling to the end of Sneath Road, and some 60 years in the case of the original dwelling at the rear of the site which has been subject to ongoing improvements following additions and alterations being approved in 2011.

An application for land division is restricted in the Conservation Zone. This makes separating the two lawful dwellings onto their own titles infinitely more difficult.

The previous consulting assessment manager in the Robe Council, Mr David Hutchison, a highly respected planner, had began investigations into an extension of the Boatswains Point settlement to include this property at around 2017, soon after the time that additions were approved. After he left this position it is understood that the Council abandoned plans to extend the boundaries of the Rural Settlement Zone due mainly to the impending changes to the planning system.

The allotment is at the northern end of the settlement and while it contains highly valuable dune system on its western side, the eastern, flatter part of the site is devoid of native vegetation and more manicured. The front part of the site is similarly outside of environmentally sensitive dunes. This contains one of the dwellings.

It is considered that at the very least, the Limestone Coast Strategic Plan put Boatswains Point on the agenda for a potential Code Amendment to correct what I see as an anomaly in the boundaries between the Settlement Zone and Conservation Zone.

Protection of the dune system is provided by the Native Vegetation Overlay anyway but there is no reason that the part of the site containing the dunes could not remain in the Conversation Zone.

Aerial Map with Zoning – Area in Blue to include in Rural Settlement Zone

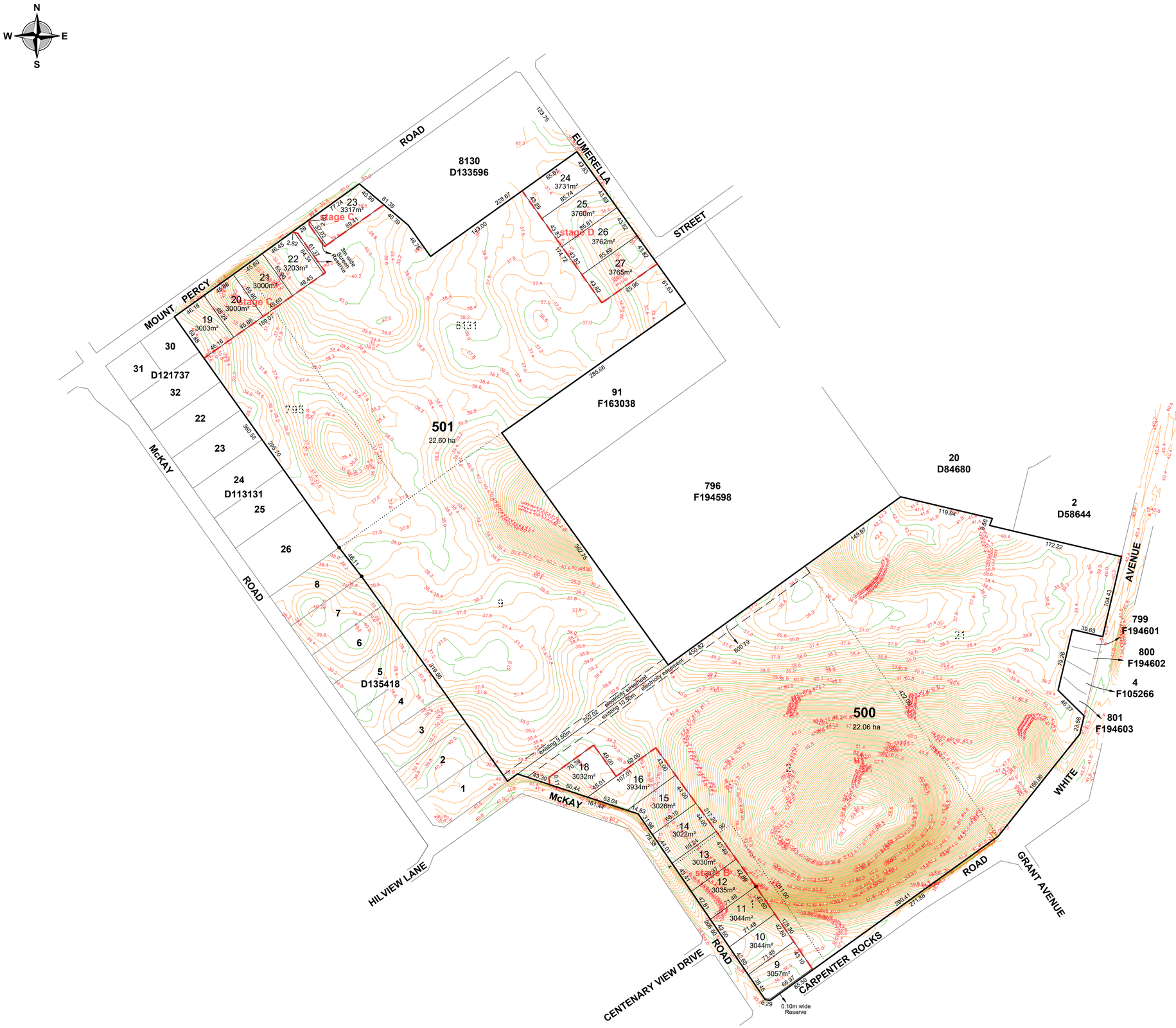
I look forward to consideration being given to a future Code Amendment to extend the boundaries of the Rural Settlement Zone to part of the site of [redacted]

Please contact me on [redacted] if there is anything requiring clarification.

Yours sincerely,

[redacted]

Andrew Cronin MPIA
Director, AcroPLAN[SA] Pty Ltd
MURP BDes (Arch) St
Accredited Professional – Planning (PDI Act 2016)



Plan SA 24036196
Development No. 732 / D416 / 24
District Council of Grant

Proposed Plan of Division
Allotments 1 & 2 in D15478
Allotment 9 in D135418
Allotment 21 in D84680
Allotment 795 in F194597
Allotment 8131 in D133596
Hundred of Blanche
in the area named

Compton

PT CT 5473/874
CT 5752/56
CT 5896/841
CT 6179/6
CT 5774/750
CT 6295/14

REGISTERED OWNER(S) : EHOMES PTY LTD

0 25 50 100 150 200 250 m

1:2500

AMENDED 13.02.2025

STATION RUN

EMPAK HOMES

Total area of Land	50.56ha
Proposed allotments Stage B	9
Length of new road	Nil
Total area	2.82ha
Proposed allotments Stage C	5
Length of new road	Nil
Reserve area	296m²
Total area	1.58ha
Proposed allotments Stage D	4
Length of new road	Nil
Total area	1.50ha

Staging is indicative and subject to developers requirements.

Contour interval 0.2m.
Datum AHD.

Dimensions and areas are subject to survey.
See C'sT for existing easement details.

Original Sheet Size A1

Ben Christopher Shepherd
LICENSED SURVEYOR

REF: 20G0043	
DWG NO.: 20G0043-PROP_01(C)	
REVISION: C	
LJM 28/08/2024	

Alexander & Symonds Pty Ltd
27A Crouch Street South Mt Gambier,
South Australia 5290
PO Box 981 Mt Gambier, SA 5290
ABN 93007 753 988

T (08) 8725 5299
F (08) 8724 9193
W www.alexander.com.au
E mtgam@alexander.com.au

+ Property + Land Development +
+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds Surveying Consultants

EMPAK HOMES

Limestone Coast Southern
Regional Assessment Panel
Thursday 19 June 2025

DA 24036196 - Compton SA 5291 - Land Division - Staged to Create 19 (18) allotments

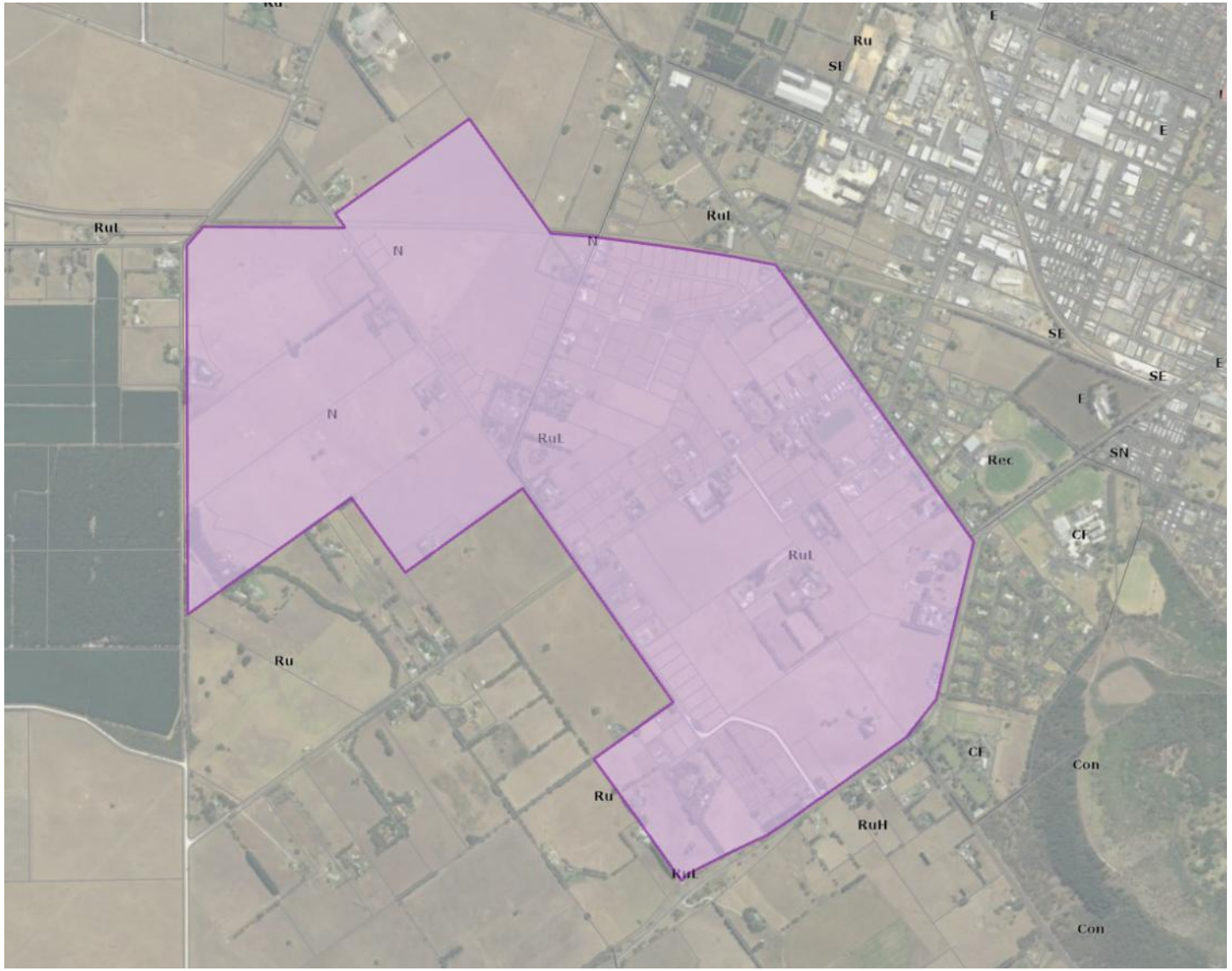
Proposed allotments not 5,000m2

I will speak to the, **‘Or’**;

‘of suitable size and dimension to ***contribute to the existing semi-rural pattern of development consistent to the locality*** *and suitable for their intended use’*

Locality

- As provided by the SPC
- Not disputed in QoSV, guidance questioned
- DCG used in SLUP(2024)
- DCG using in current administrative processes
- I agree with this locality for reasons described below
- ‘of suitable size and dimension to contribute to the existing semi-rural pattern of development **consistent to the locality** and suitable for their intended use’




Urban centre
Urban
Suburban
Enterprise
Peri-urban
Rural
Larger than Urban Allotments
Smaller than
Rural Allotments
Semi-Rural
Exist in the Town/Citys Peri-Urban Fringe

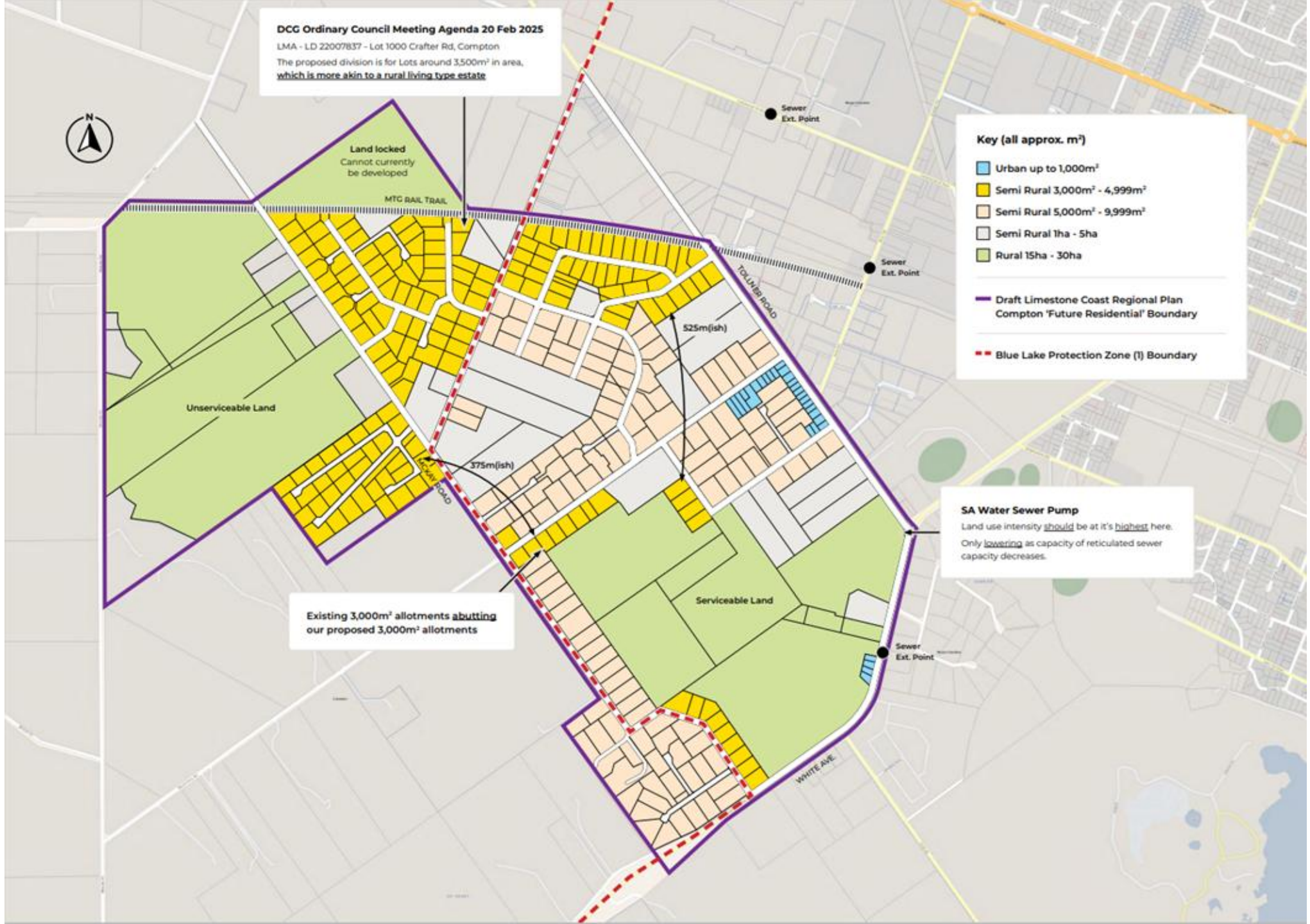
‘Orderly’ Pattern of Development

Defn: Master planned, developed: stage-by-stage, street-by- street, allotment-by-allotment

This allows us to say things like:

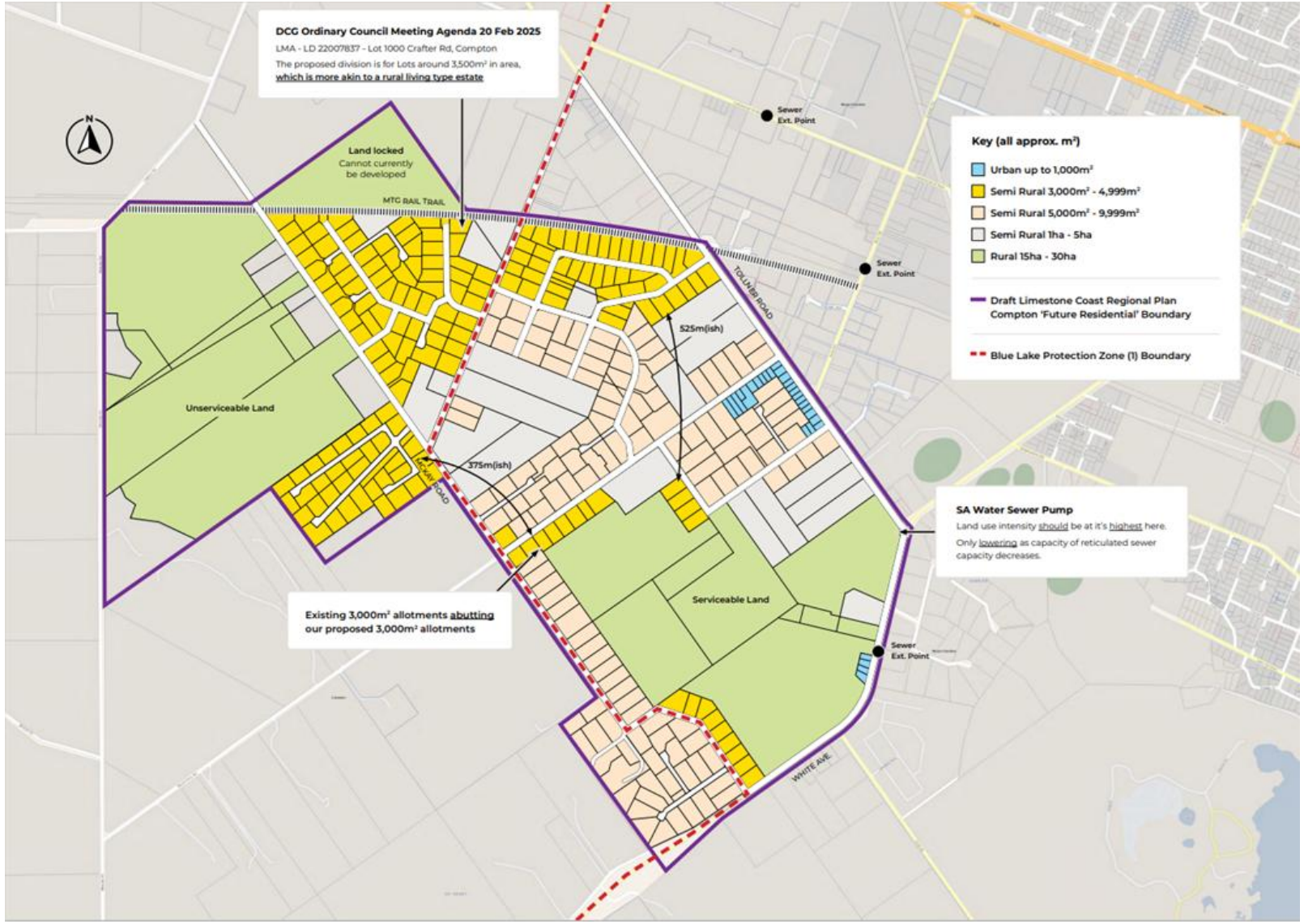
“This ‘<u>locality</u>’ provides an ‘<u>orderly</u>’ pattern of residential development. With a ‘<u>medium – land use intensity</u>’ which presents as allotments of around 800m2. Allotments are fully serviced and have access to quality recreational green space”

So, if someone like us comes along and wants to put in 3,000m2 allotments. We just say, no!


DCG Ordinary Council Meeting Agenda 20 Feb 2025
LMA - LD 22007837 - Lot 1000 Crafter Rd, Compton
The proposed division is for Lots around 3,500m² in area, which is more akin to a rural living type estate
N
Land locked
Cannot currently be developed
MTC RAIL TRAIL
Unserviceable Land
Sewer Ext. Point
Sewer Ext. Point
Sewer Ext. Point
TOLNER ROAD
525m(ish)
375m(ish)
MCKAY ROAD
Serviceable Land
WHITE AVE
Existing 3,000m² allotments abutting our proposed 3,000m² allotments
Key (all approx. m²)
Urban up to 1,000m²
Semi Rural 3,000m² - 4,999m²
Semi Rural 5,000m² - 9,999m²
Semi Rural 1ha - 5ha
Rural 15ha - 30ha
Draft Limestone Coast Regional Plan Compton 'Future Residential' Boundary
Blue Lake Protection Zone (1) Boundary
SA Water Sewer Pump
Land use intensity should be at it's highest here.
Only lowering as capacity of reticulated sewer capacity decreases.

‘Disorderly’ Pattern of Development

- Defn: Unplanned, uncoordinated, lack of cohesive vision
- Inappropriate positioning of zones (in relation to transitioning ‘land use intensity’)
- Inappropriate development within zones (acknowledged)
- Disordered sequencing of development (in relation to transitioning ‘land use intensity’)
- Land locked undevelopable land
- A disparate and geographic jumble of allotment types/styles (see ‘notable traits’)



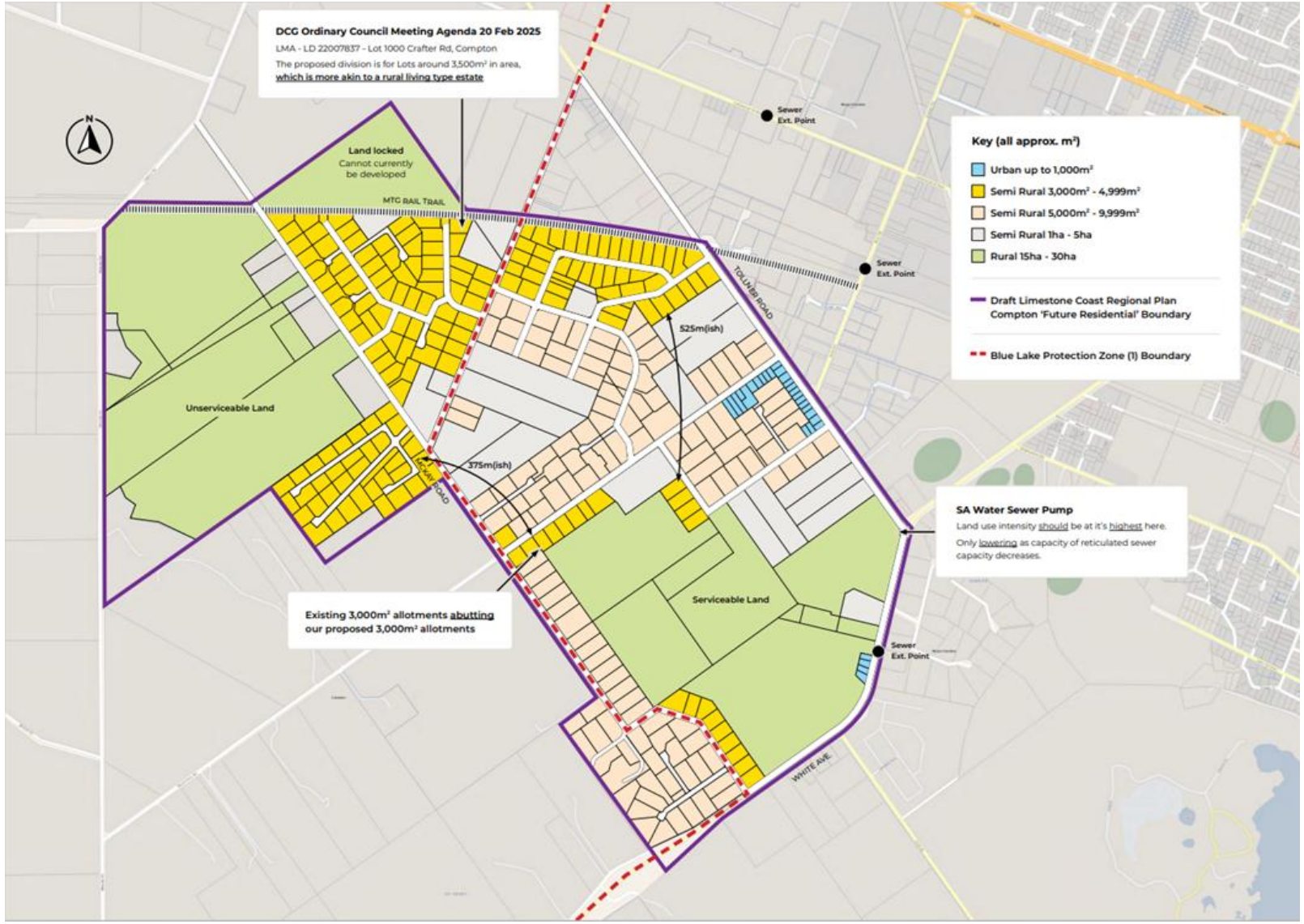
‘Disorderly’ Pattern of Development

Unlike our Conroe Heights ‘locality’, here, we can’t say things like:

“This ‘locality’ provides an ‘orderly’ pattern of semi-rural development. With a ‘low – land use intensity’ which presents as allotments of around 5,000m2. Its largely un-serviced allotments have access to quality recreational green space”

Because that’s not an accurate reflection of what’s going on here

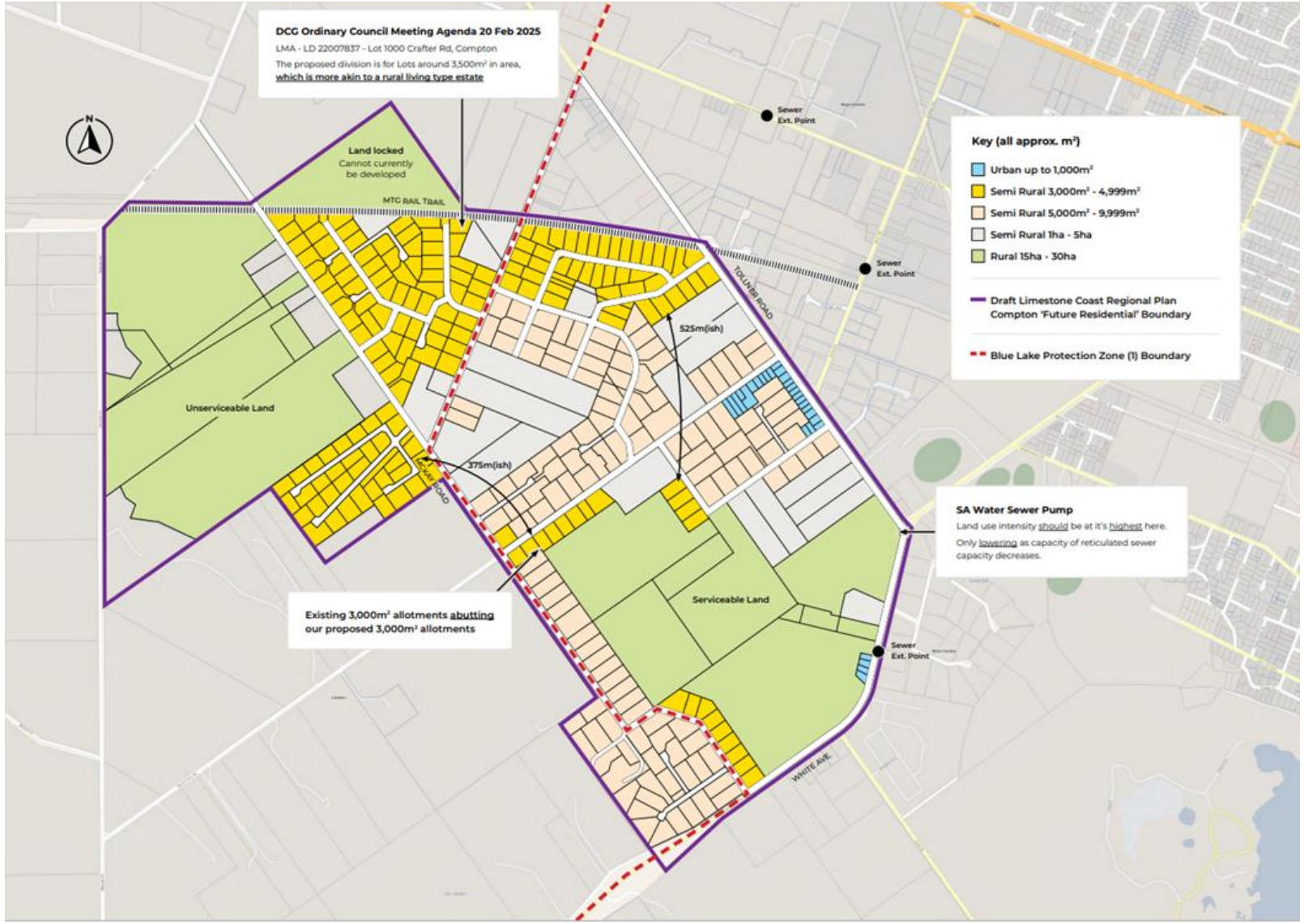
So, if someone like us comes along and wants to put in 3,000m2 allotments. We have to consider the ‘notable traits’ that collectively create this ‘disorderly pattern’



‘Disorderly’ Pattern of Development

‘Notable Traits’:

- Small no. of urban allotments, up to 1,000m2. Exist as two separate interconnected groups
- Significant number of semi-rural 3,000m2 - 4,999m2 allotments. Exist both interconnected in groups and dispersed individually
- A significant number of semi-rural 5,000m2 - 1ha allotments. Exist mainly in interconnected but separated groups
- Small no. of semi-rural allotments of 1ha - 5ha. Exist largely unconnected
- Small, but significant in site coverage, no rural land parcels of between 15ha – 30ha. Exist as two separate interconnected groups



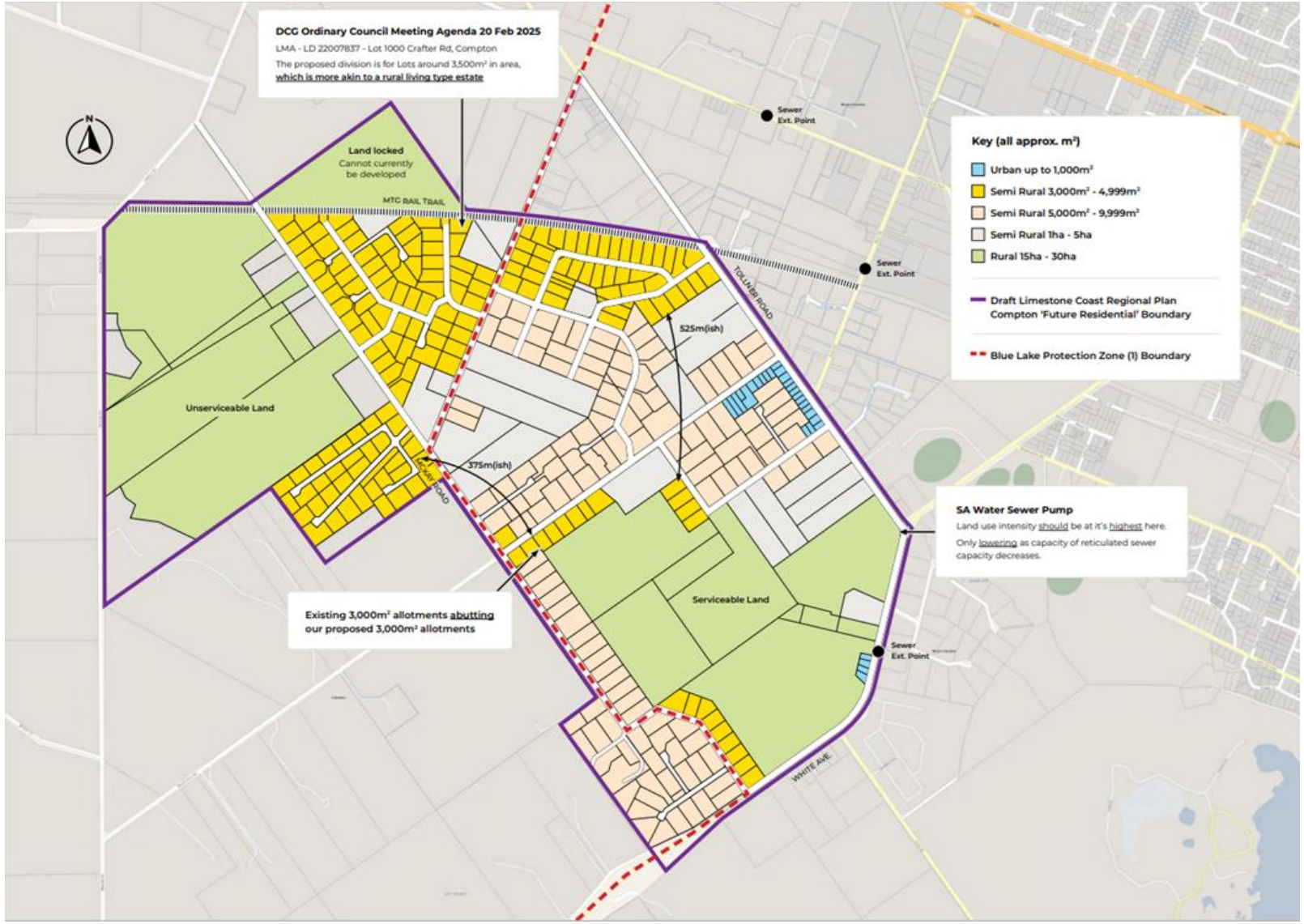
‘Disorderly’ Pattern of Development

So, here, we can say things like:

“This ‘locality’ provides a ‘disorderly’ pattern of semi-rural development. With a ‘low – land use intensity’ which presents as allotments of between 1,000m2 and 30ha. Whist serviceable, allotments are largely un-serviced. Allotments do not have access to quality recreational green space”

Because that’s an accurate reflection of what’s going on here

So, if someone like us comes along and wants to put in 3,000m2 allotments. We have to acknowledge that within this ‘locality’. They **cannot** be wholly consistent with the existing ‘disorderly’ pattern of development. They can only be consistent with ‘significant notable traits’ that exist within the ‘disorderly’ pattern of development.



Proposed allotments not 5,000m2

However, in relation to the, **‘Or’**;

*Our proposed allotments are (as it relates to ‘**significant notable traits’**): of suitable size and dimension to **contribute to the existing (disorderly) semi-rural pattern of development consistent to the locality** and suitable for their intended use’*

Thank You

I **encourage** you to ask questions

Not because I think I'm smart and will have all the answers

Because, for such a run-of-the-mill proposal, there's a lot going on here

In your professional capacity, I'd also ask. That if one-day this picture happens to pop-into your head. Take pause. To consider, *as it relates to development controls*, what (over-time) has played-out in these two localities? →

DCG Ordinary Council Meeting Agenda 20 Feb 2025

LMA - LD 22007837 - Lot 1000 Crafter Rd, Compton

The proposed division is for Lots around 3,500m² in area, <u>which is more akin to a rural living type estate</u>

N

Land locked
Cannot currently be developed

MTG RAIL TRAIL

Unserviceable Land

TOLLNER ROAD

525m(ish)

375m(ish)

MCKAY ROAD

Serviceable Land

WHITE AVE.

Sewer Ext. Point

Sewer Ext. Point

Sewer Ext. Point

Existing 3,000m² allotments <u>abutting</u> our proposed 3,000m² allotments

SA Water Sewer Pump

Land use intensity <u>should</u> be at it's <u>highest</u> here.

Only <u>lowering</u> as capacity of reticulated sewer capacity decreases.

Key (all approx. m²)

- Urban up to 1,000m²
- Semi Rural 3,000m² - 4,999m²
- Semi Rural 5,000m² - 9,999m²
- Semi Rural 1ha - 5ha
- Rural 15ha - 30ha

- Draft Limestone Coast Regional Plan Compton 'Future Residential' Boundary
- Blue Lake Protection Zone (1) Boundary

Tuesday, 17 June 2025

Planning and Land Use Services
Attention: Growth Management Team
Department for Housing and Urban Development

By email: plansasubmissions@sa.gov.au

Dear Sir/Madam,

SUBMISSION: DRAFT LIMESTONE COAST REGIONAL PLAN – EMPAK HOMES

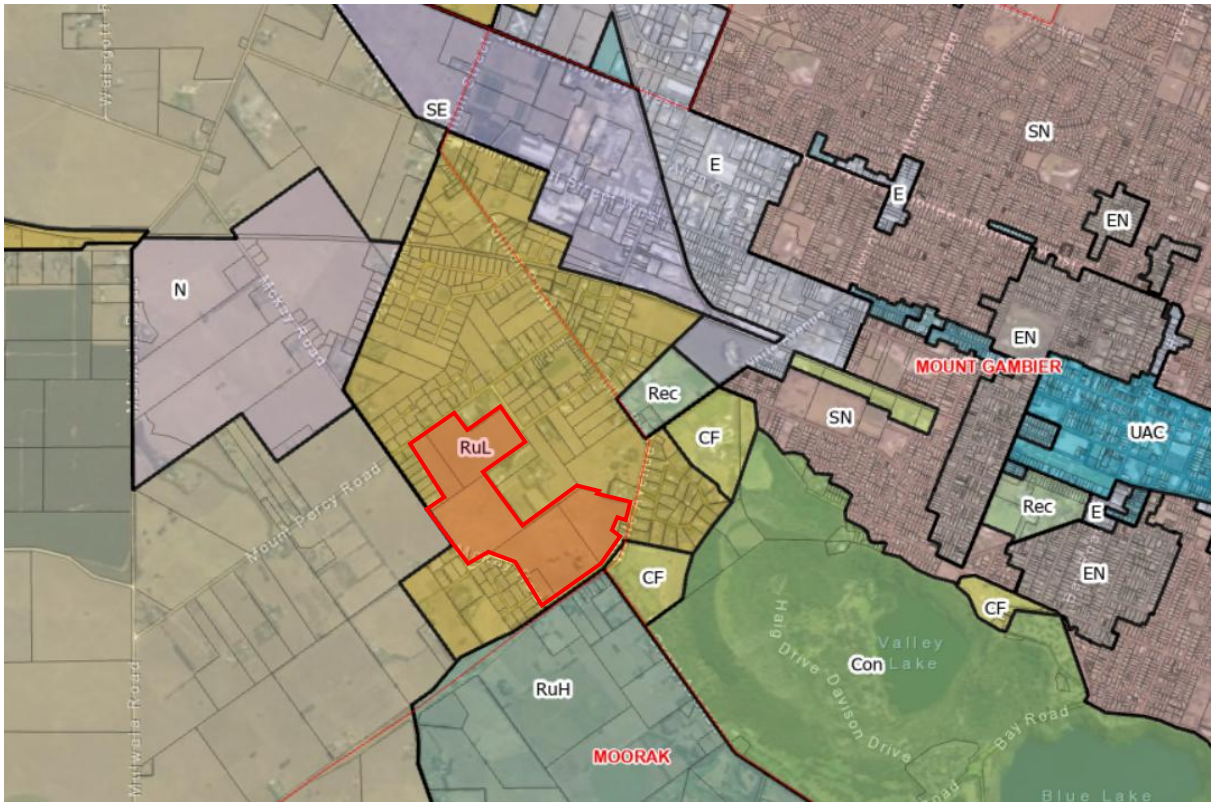
Thank you for the opportunity to provide feedback on the draft Limestone Coast Regional Plan (LCRP).

The draft LCRP is of particular relevance to Empak Homes, as explained in detail below.

Empak Homes Land Holdings

Since 2005, Empak Homes has acquired approximately 55 hectares of land across six allotments in Compton, located south-west of Mount Gambier. As shown in red in Figure 1 below.

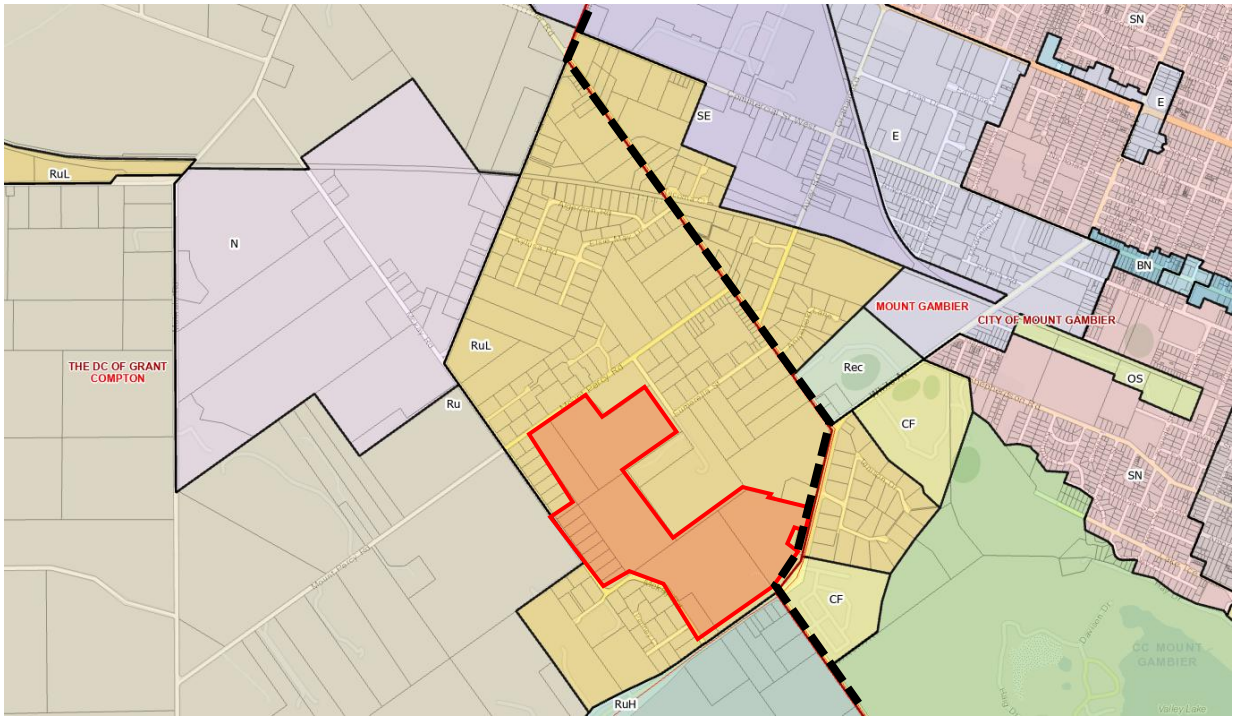
Figure 1 – Empak Homes Land – Compton (Source: SAPPA)



The land is currently located within a Rural Living Zone and subject to a minimum site area TNV of 5,000m^2. Prior to transition to the Planning and Design Code, the land was zoned Country Living in the DC Grant Development Plan. Earlier, the land had been zoned Deferred Urban (1993). Also, Urban Fringe (1985) when located within the District Council of Mount Gambier.

The Rural Living Zone is dissected by the LGA boundary (refer Figure 2 below), with land to the east of Tollner Road and White Avenue located in the City of Mount Gambier (in the suburb of Mount Gambier), and land to the west located in the District Council of Grant (DCG) (in the suburb of Compton).

Figure 2 – Rural Living Zone dissected by LGA Boundary



The land is located along the eastern edge of the zone, adjacent existing Community Facility and Rural Living Zones on the other side of White Avenue and a Recreation Zone on the other side of Tollner Road.

Importantly, it is capable of being serviced by existing water mains and a high-capacity reticulated sewer network.

Equally, the land is sited within the quadrant of Mount Gambier with the most significant level of existing social infrastructure, including:

Natural - Crater Lakes Precinct, Mount Gambier Rail Trail (incl. Nature Play Area).

Urban - Wulanda Recreation and Convention Centre, Centro Plaza Shopping Centre.

Recreational - Blue Lake Golf Club, International Soccer Club, Malseed Park (Football, Netball, Cricket, Tennis, Soccer, Gymnastics, Croquet), Hasting Cunningham Reserve (Soccer, Tennis, BMX, Pump Track, Dog Park & Obedience, Wood Turning, Car Shows), Mount Gambier Tennis Club, Vansittart Park (Community Playground & Gardens, Football, Netball, Lawn Bowls).

Educational - Tenison Woods College, Mount Gambier High, Reidy Park Primary.

Neighbourhood Zone Context

A Neighbourhood Zone is located to the north-west of our land, separated from the Mount Gambier township by a Rural Living Zone. Portions of which are either being developed or are approved for development.

Despite having a 450m^2 minimum site area TNV, development within this zone is acknowledged (by the DCG) as not being in keeping with a Neighbourhood Zone. But, more akin to Rural Living style development. Therefore, while the Regional Plan identifies the land as being zoned for residential development, it is important to note that it is effectively alienated due to a lack of infrastructure.

Conversely, inquiries into the serviceability of our site indicate that the existing reticulated sewer system has the capacity to service allotments down to a Neighbourhood Zone level. In confirming sewer capacity, as it relates to the scale of surrounding serviceable land (i.e. a combined 84ha), future investigations may consider the use of a *Master Planned Neighbourhood Zone* to be an efficient development pattern within which to efficiently rollout infrastructure.

In relation to land use intensity. Acknowledging the Rural Living style (i.e. 3,000m2) of development within the Neighbourhood Zone mentioned above. Also, the 450m^2 minimum lot size in the adjacent Suburban Neighbourhood Zone. Our site has the ability to appropriately bridge this land use intensity gap (i.e. 450m2 out to 3,000m2). The confirmed sewer capacity driving the transition of land use intensities. Again, further investigations may consider the use of a *Master Planned Neighbourhood Zone* as an appropriate tool to implement this development control.

It is clear that our site represents the most orderly, economical and timely opportunity to extend reticulated sewer services, open up identified adjacent land parcels for development, with potential to investigate additional unidentified land parcels.

Disorderly Development of Peri-Urban Land

Over the last 10-20 years, we have seen the disorderly sequencing and inappropriate development of land in the peri-urban areas around Mount Gambier. Warnings raised in Minister Champion's Rural Living Code Amendments memorandum of November 2022 have become a reality. Numerous unsewered developments (including Rural Living style development in Neighbourhood Zones) have underutilised or prematurely terminated sewer infrastructure.

As described above, the Neighbourhood Zone, which is intended to accommodate 450m^2 allotments, is an exemplar of land that cannot be developed due to lack of infrastructure and the prohibitive cost involved in bringing infrastructure to the land. Yet within it, Rural Living style development has received development approval and proceeded.

The Limestone Coast Regional Plan can rectify poor essential infrastructure extension planning, disorderly sequencing and inappropriate development. A *Master Planned Neighbourhood Zone* presents the highest level of orderly development available.

Blue Lake Zone 1 (Protection)

Our land is sited within Blue Lake Zone 1 (Protection). CSIRO research confirms that a fully reticulated sewer system provides the highest and best level of health and environmental protection to the water supply catchment. Onsite wastewater management systems such as those utilised in the Compton area, recognised as offering only low to moderate protection.

Combined with an integrated wastewater management plan and provision of water sensitive urban design solutions, as would be expected in a *Master Planned Neighbourhood Zone*. Our land can best protect the water supply catchment.

'Station Run' Residential Estate

Over the last 10-years, we have sought to develop our land into a residential estate called 'Station Run'. Advice from SA Water and FMG Engineering suggests that the site can service allotments down to a Neighbourhood Zone level. Using existing water mains and a high-capacity sewer network (subject to standard augmentation requirements).

In our view, developing the land with 5,000m^2 allotments would be a severe underdevelopment of the land and underutilisation of available physical and social infrastructure. Equally, it would perpetuate the use of onsite water management systems, many adjacent to groundwater bores, within Blue Lake Zone 1 (Protection).

This severe underdevelopment of the land is particularly pertinent to our site, given its scale as future developable land (approx. 56ha). Also, its potential to open up adjacent land parcels (i.e. a combined approx. 84ha.) for development in an orderly, economic and timely manner.

'Station Run' as a *Master Planned Neighbourhood Zone*

The *Master Planned Neighbourhood Zone* applies to areas identified as broad-hectare sites, where new roads, open space and infrastructure can be developed along with housing. Land division and infrastructure can be rolled out in a coordinated manner and orderly sequence, guided by a concept plan. New or expanding communities are envisaged with a diverse range of housing that supports a range of needs and lifestyles located within easy reach of a diversity of services, facilities and open space.

Our site, as expected within a *Master Planned Neighbourhood Zone*:

- has access to reticulated sewer infrastructure of sufficient capacity;
- has access to the City's' most diverse array of existing social infrastructure;
- provides the highest and best level of health and environmental protection to the water supply catchment;
- allows for staged development that provides the orderly, economic and timely delivery of infrastructure; and
- Is of a scale that suits the master planning of development.

Bringing our site to market as a *Master Planned Neighbourhood Zone*, would place downward cost pressures on Mount Gambier residential land, due to its orderly, economic and timely delivery.

Code Amendment (*encourage the orderly expansion of the urban area*)

Under the *Planning, Development and Infrastructure Act 2016*, Empak Homes lodged a Proposal to Initiate to rezone our land to Rural Neighbourhood with a minimum site area of 1,300m^2. Minister Champion declined our proposal stating that *"the proposal does not encourage the orderly expansion of the urban area".* Only certain zones encourage the orderly expansion of the urban area. These including various Neighbourhood Zones, which along with urban growth boundaries, guide development to prevent sprawl and ensure sustainable growth. Minister Champion's Rural Living Code Amendments memorandum of November 2022, clearly details the manner in which Rural Living Zones discourage the orderly expansion of the urban area.

Our interpretation of the Ministers advice is that our site would best encourage the orderly expansion of the urban area, as a Neighbourhood Zone. The most orderly, economic and timely manner in which to extend physical infrastructure, ensure access to social infrastructure and to protect the water catchment supply, would be through the implementation of a *Master Planned Neighbourhood Zone*. In making this submission we are following the Ministers further advice that the *"future densification should be explored by the District Council of Grant and the City of Mount Gambier as part of the regional planning process..."*.

The District Council of Grant has recently asked us to take part in a 'Proposal to Initiate', for what we are being advised will be a Ministerial Code Amendment (MCA). The Code Amendment covering those lands identified in the LCRP as 'Future Residential Compton'. We are currently considering our position on this matter, as it relates to the establishment of mutually agreeable terms of reference. We do so fully aware that if we do not support the code amendment, that, our land will continue to stagnate and the opportunity to guide orderly development will be lost. LCRP outcomes will undoubtedly impact any Code Amendment, as it relates to both timing and Ministerial support.

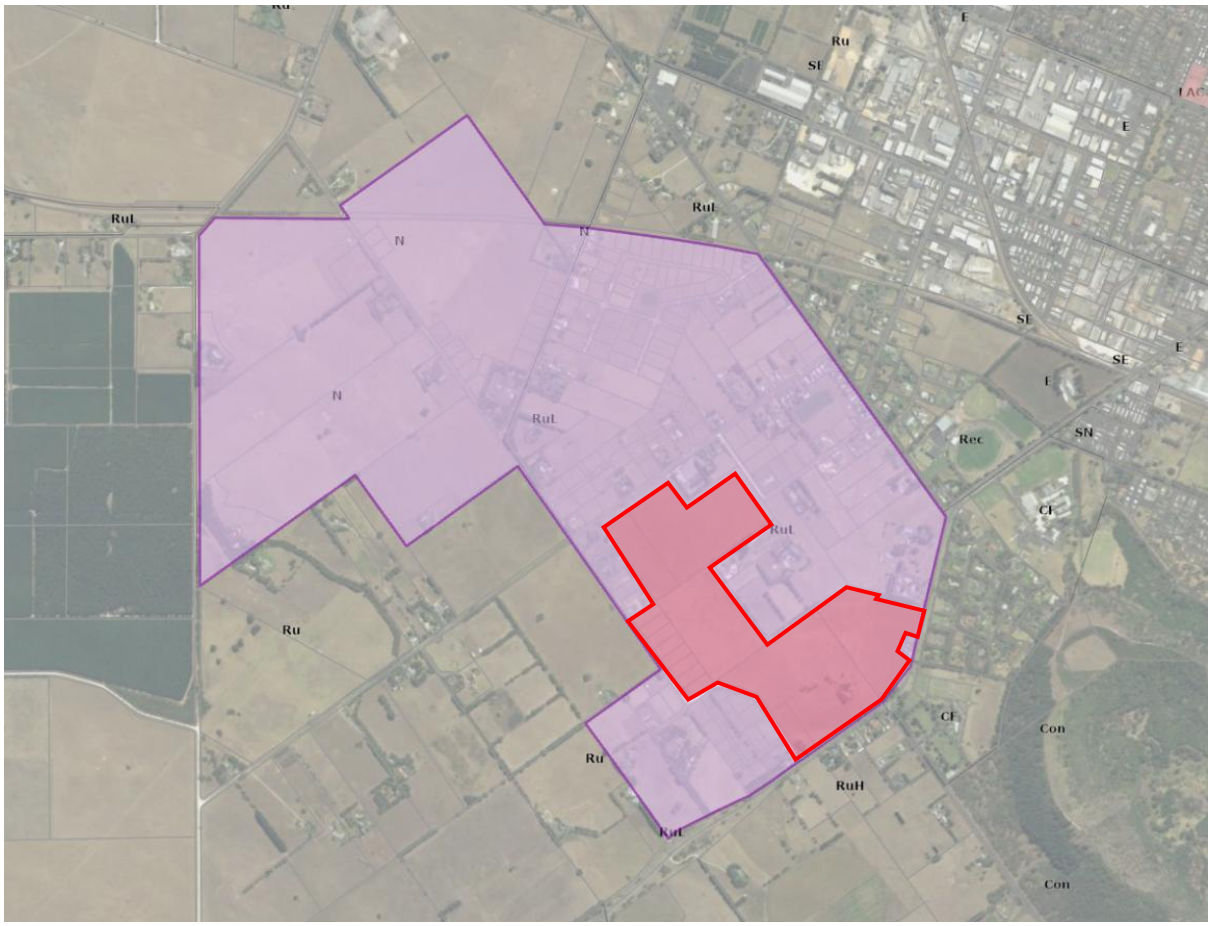
LCRP and MCA processes aside, we have in anticipation of rezoning our land, already undertaken significant investigations to underpin the suitability of our site for more intensive development, including:

- Sewer and Water Servicing (SA Water and FMG Engineering)
- Blue Lake Zone 1 (Protection) (CSIRO, FMG Engineering, PM Design)
- Integrated Water Management Plan (FMG Engineering)
- Construction Environmental Management Plan (FMG Engineering)
- Traffic Impact (HDS Traffic Engineering).
- SAPN Servicing (Adelaide Power Design Service).
- National Broadband Network Servicing (NBNco).
- APA Group Natural Gas Servicing (APA Group).
- Landscape Masterplan Concept (Urban Edge Landscape Architects).

Draft Limestone Coast Regional Plan

We confirm our support for the identification of the Empak Homes land (and the wider Rural Living Zone within the District Council of Grant) as being within a 'Future Residential' area, as shown in the figure below.

Figure 3 – Future Residential Area – Compton (Source: https://regional.plan.sa.gov.au)



We note the following action applies to our land:

Title	Sub Theme	Action Type	Description	Region	Responsible Party	Timeframe
Investigations Future Residential Compton	Housing Supply and Diversity	Investigation	Investigate appropriate land use outcomes in Compton to plan for future projected housing growth, identify suitable densities and locations for development to occur, local infrastructure and service requirements and delivery timing to inform updates to the Regional Plan.	Limestone Coast	District Council of Grant	03/2025-03/2030

We are concerned that the wording of this Action lacks clarity; and more importantly, is assigned such a lengthy timeframe.

Considering the weight of evidence supporting an increased residential density on our site: shovel ready development, protection of water catchment supply, access to significant existing physical and social infrastructure, transitioning of land use intensities and the orderly, economic and timely rollout of works. Also, importantly, adherence to the Ministers clear advice to encourage the orderly expansion of the urban area. **We propose LCRP future investigations consider rezoning land parcels 7, 8, 9 & 10 (a combined 84 ha), as described in the DCG Strategic Land Use Plan 2024 (Pg. 52, Figure 6), to a Master Planned Neighbourhood Zone. With land use intensities based on the full capitalisation of confirmed reticulated sewer capacities.**

Figure 4 – DCG Strategic Land Use Plan (Oct. 2024) - Pg. 52 - Figure 6: LDOAs in Compton.

In light of the above, we respectfully request that the Action is reworded as follows:

Title	Sub Theme	Action Type	Description	Region	Responsible Party	Timeframe
Future Residential Land Compton	Housing Supply and Diversity	Investigation	*Investigate increased residential density opportunities in Compton to meet future projected housing growth in locations that capitalise on existing physical and social infrastructure availability and maximise protection of the water catchment supply.*	Limestone Coast	The District Council of Grant	2025 - 2027

Future investigations can encourage the orderly expansion of the urban area, by recognising our site (also, those immediately adjacent land parcels) as a *Master Planned Neighbourhood Zone*. The Limestone Coast Regional Plan being updated accordingly.

Mount Gambier Master Plan

We are very encouraged to see that the Implementation Plan includes the following action:

Title	Sub Theme	Action Type	Description	Region	Responsible Party	Timeframe
Greater Mount Gambier Master Plan	Coordination and delivery	Masterplan	Prepare a Greater Mount Gambier Master Plan to ensure a coordinated approach to the future development of Mount Gambier and its environs.	Limestone Coast	Department for Housing and Urban Development, City of Mount Gambier, District Council of Grant	2025 - 2027

The *Greater Mount Gambier Masterplan* (2008) is very outdated and requires urgent revision - and regular review - in a bipartisan manner by both local councils.

Conclusion

Empak Homes appreciates the opportunity to contribute to the LCRP and welcomes the recognition of our land as part of a 'Future Residential' area.

However, we remain concerned that without timely and decisive action, the region risks perpetuating inefficient land use patterns and intensities, underutilisation of existing infrastructure (physical and social) and the continued use of onsite water management systems within Blue Lake Zone 1 (Protection).

We respectfully request that the Regional Plan be amended to reflect a more ambitious and time-sensitive approach to planning in Compton. Including a revised action that supports increased residential density, leverages existing infrastructure (physical and social) and protection of the water catchment supply.

We note our strong support for the development of a new Greater Mount Gambier Master Plan to ensure coordinated and bipartisan planning for the region's future.

Our site is exceptionally positioned to immediately support residential development. Largely due to the extensive technical investigations that we have already undertaken to underpin its suitability. In urging the Department to prioritise future investigations in Compton, we stress the immense opportunity available to us. A Master Planned Neighbourhood Zone of significant scale, developed collaboratively across all stakeholders, delivering genuine and sustainable *People, Housing and Liveability* solutions. Well. That is a unique unicorn.

Empak Homes has been delivering genuinely sustainable residential development in the Limestone Coast for three generation. This submission is wholly underpinned by the strength of this experience.

With regards,

[redacted]
Heath Mitchell, BBuiltEnv, MBA

Empak Homes
[redacted]

FRANK BRENNAN
CONSULTING SERVICES
ABN 91 376 720 132

PO Box 96
BEACHPORT SA 5280

M: [redacted]
E: [redacted]
W: www.fbcs.com.au

17 June 2025

Planning and Land Use Services
Department for Trade and Investment
GPO Box 1815
ADELAIDE SA 5001

via: plansasubmissions@sa.gov.au

Dear Regional Planning Program Team

Submission – Draft Limestone Coast Regional Plan

I am acting for Chris & Robyn Annear in relation to their properties at [redacted] and make the following submission in relation to the draft Limestone Coast Regional Plan.

1. Property Details

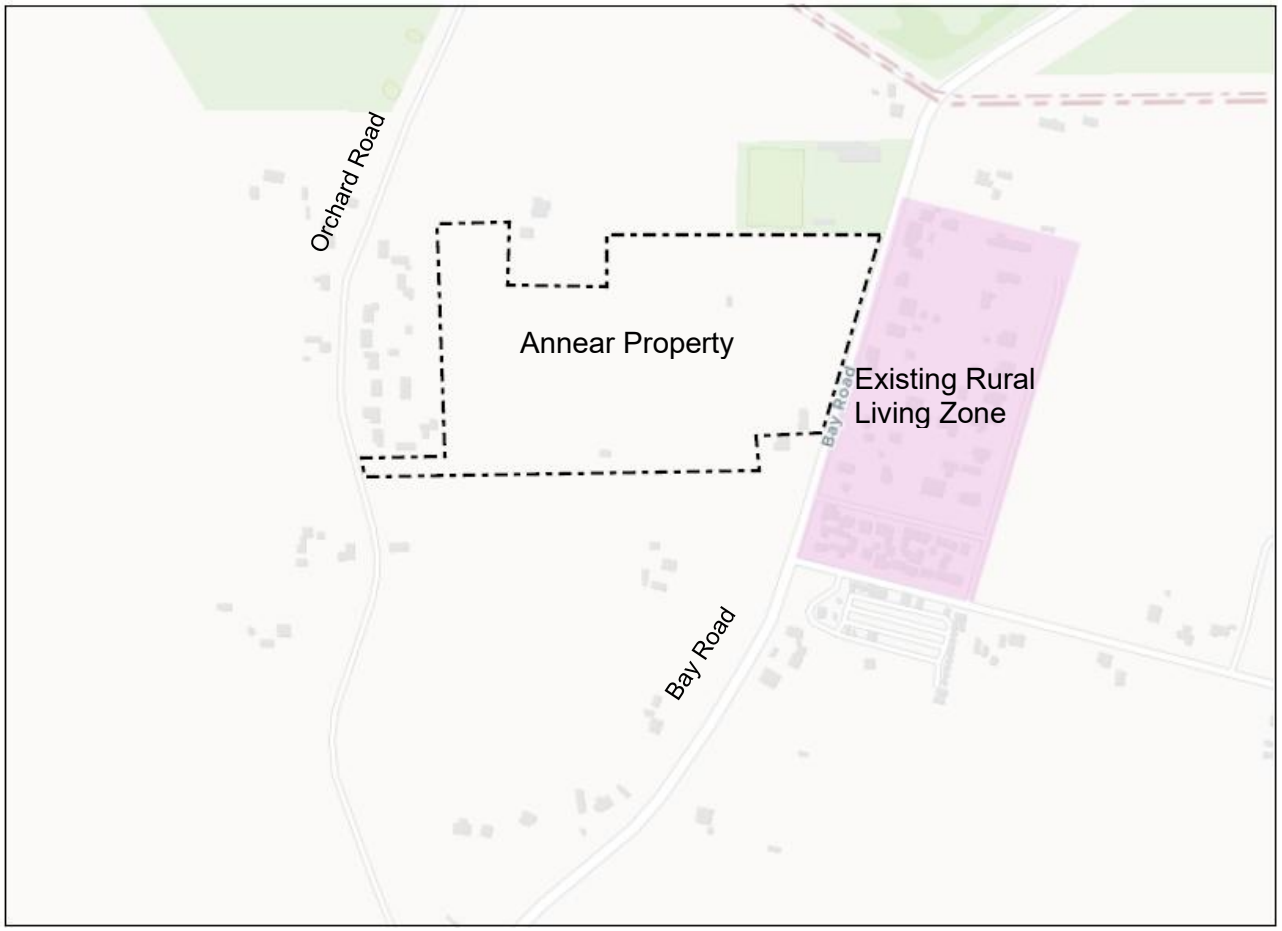
Property Description :	Allotment 7 in Filed Plan 104620 and Allotment 4 in Deposited Plan 24272
Certificate of Title:	[redacted]
Address :	[redacted]
Area (Ha / Acres) :	16.590 Ha / 40.994 Acres
Current Zoning :	Rural Horticulture / Limited Land Division Overlay Minimum Site Area – 15 Ha
Current Land Use :	Rural Living / Primary Production

Source – SAPPA Maps

2. Proposed Zoning – Draft Limestone Coast Regional Plan

The draft Limestone Coast Regional Plan proposes no rezoning in the locality around the Annear's properties as shown in the plan below.

The location of the Annear's properties in relation to the existing Rural Living Zone on the eastern side of Bay Road abutting the Annear's property at [redacted] is also shown on the plan below.



Base Plan extracted from Draft Limestone Coast Regional Plan

3. Character of the Locality

The character and nature of the locality around the Annear's properties is predominantly rural living development in the existing Rural Living Zone on the eastern side of Bay Road and rural living development along Orchard Road along the entire western boundary of the Annear property, located in a Rural Horticulture Zone.

The primary production allotments in the locality (and located in the Rural Horticulture Zone) are predominantly characterised by small (non-viable) farming allotments.

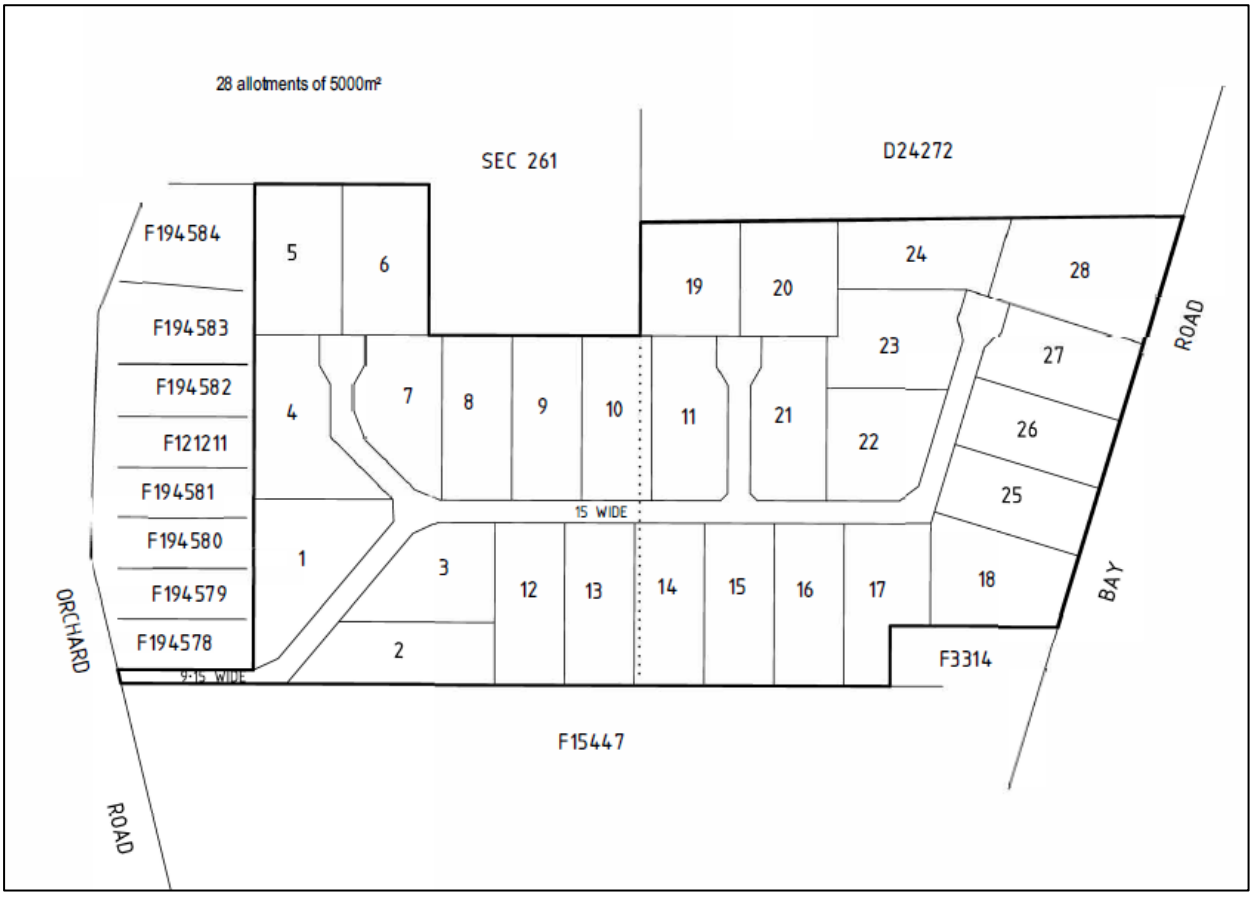
The form of development described above is shown in the aerial plan below

Source – SAPPA Maps

4. Potential Subdivision

In seeking to have the Annear properties rezoned for 'Future Residential' (Rural Living) Zone we show below a concept land division plan for the Annear properties with all access to the allotments gained from Orchard Road.

The proposed allotments have a minimum allotment size of 5,000 m^2 and no direct access onto Bay Road.



Concept Land Division Plan

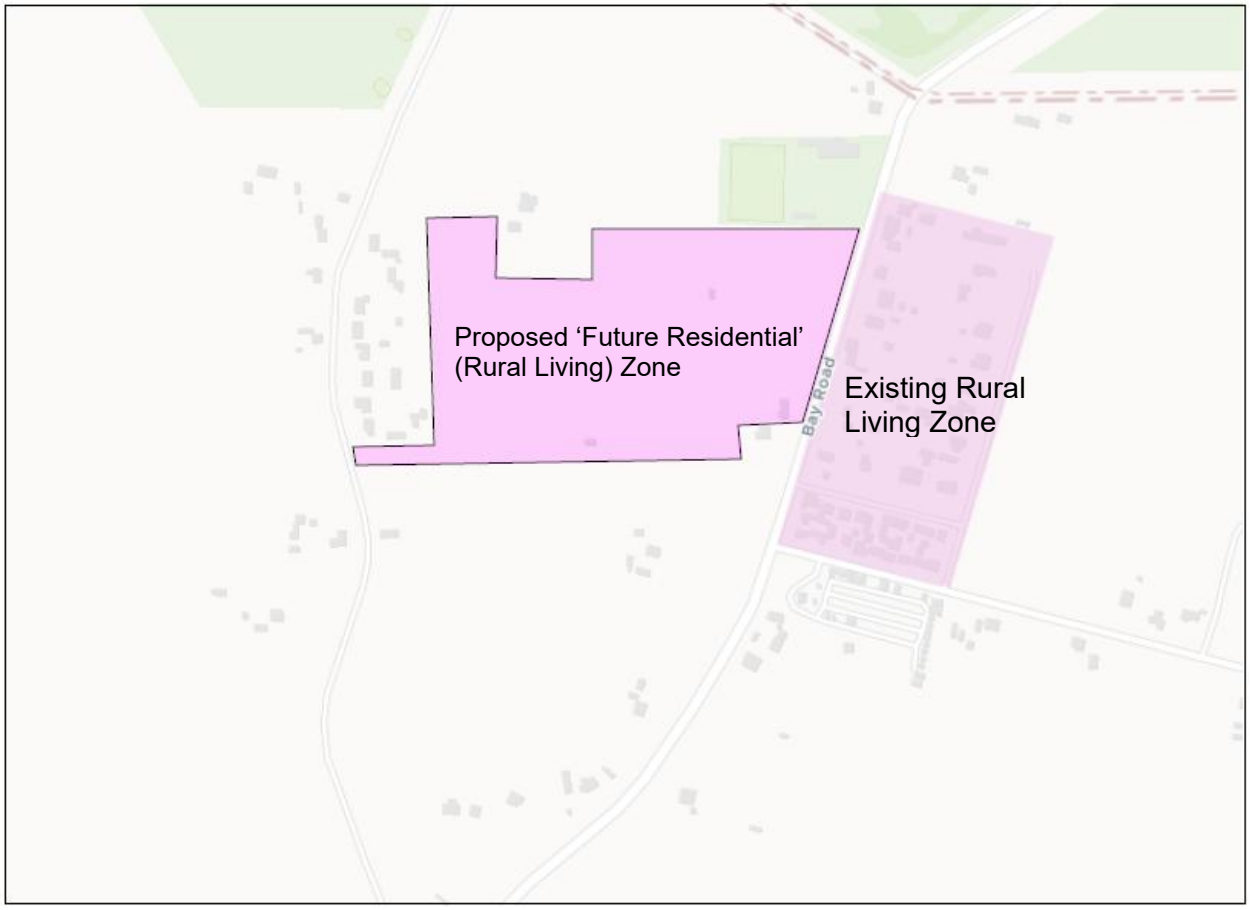
5. Our Submission

We respectfully submit, the whole of the Annear properties at [redacted] be incorporated into the 'Future Residential' (Rural Living) Zone of the Limestone Coast Regional Plan.

In seeking the rezoning, we would propose the Technical Numerical Variation (TNV) for the Minimum Site Area be 5,000 m^2.

There is an argument to extend the 'Future Residential' (Rural Living) Zone to incorporate the land bound by Bay Road, Grant Avenue and Orchard Road, being an orderly and economic expansion of the existing Rural Living Zone in this locality. See the aerial map attached delineating the extended Moorak Rural Living Zone boundary described above.

The proposed rezoning of the Annear properties is shown in the plan below.



Base Plan extracted from Draft Limestone Coast Regional Plan

We take this opportunity to thank you for the opportunity to provide a submission on the draft Limestone Coast Regional Plan for your consideration.

If you require any further information or wish to discuss this matter further, please do not hesitate to contact me at your convenience.

Yours sincerely

[redacted] rennan PSM MPIA JP
ning Professional APP20190029
Principal Consultant
FRANK BRENNAN CONSULTING SERVICES

ACCREDITED PROFESSIONAL
Planning, Development and Infrastructure Act 2016

FRANK BRENNAN
CONSULTING SERVICES
ABN 91 376 720 132
PO Box 96
BEACHPORT SA 5280
M: [redacted]
E: [redacted]
W: www.fbcs.com.au

16 June 2025

Planning and Land Use Services
Department for Trade and Investment
GPO Box 1815
ADELAIDE SA 5001

via: plansasubmissions@sa.gov.au

Dear Regional Planning Program Team

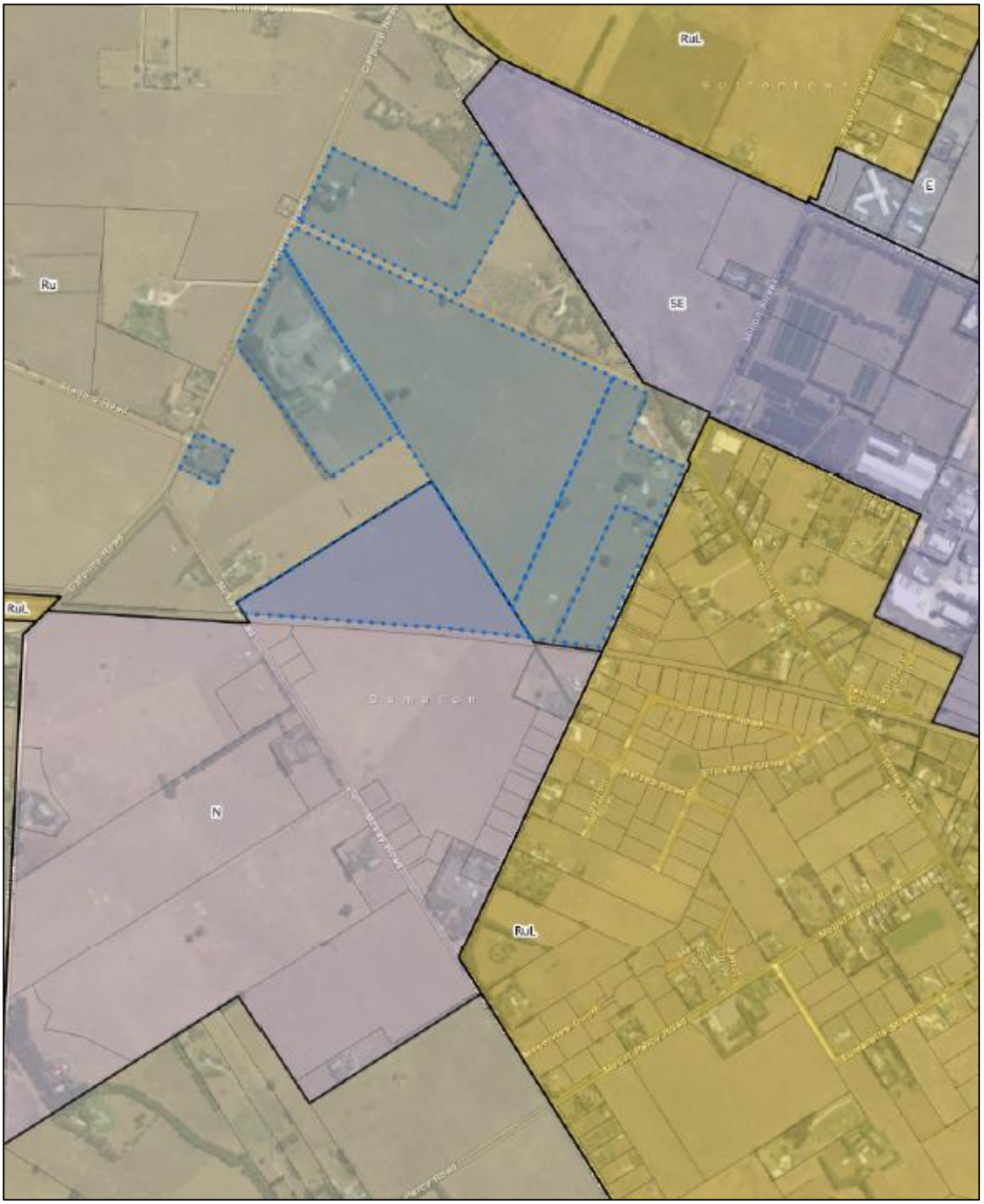
Submission – Draft Limestone Coast Regional Plan

I am acting for multiple landowners in relation to their properties at Compton as detailed in the summary below and make the following submission in relation to the draft Limestone Coast Regional Plan.

1. Property Details

Property Description :	Allotment 2 in Filed Plan 70 Allotment 70 in Deposited Plan 52745 Allotment 71 in Deposited Plan 52745 Piece 2001 in Deposited Plan 135551 Allotment 1 in Filed Plan 100223 Allotment 101 in Deposited Plan 113403 Allotment 500 in Deposited Plan 125225
Certificate of Title:	[redacted]
Address :	[redacted]
Current Zoning :	Piece 2001 – Neighbourhood Zone All Other Properties – Rural Zone
Current Land Use :	Rural Living & Primary Production

Location & Zoning Plan :



Source – SAPPA Maps

2. Character of the Locality

The properties bound by Cafpirco Road, Tollner Road, Crafter Road, the former railway corridor and McKay Road are utilised for a mix of land uses, primarily rural living, small scale (non-viable) primary production and an existing freight depot.

There is an existing water main running along Cafpirco Road, McKay Road and Crafter Road that services these properties, however no reticulated sewer services these properties.

The existing Neighbourhood Zone properties within this locality, particularly {Piece 2000 in Deposited Plan 135551 and Lot 106 in Deposited Plan 80384) have been subdivided into rural living sized allotments and the subdivisions are currently under construction. These subdivisions are shown in the aerial plan below.

To the west along Cafpirco Road the properties are varying in size and use, being a mix of rural living style allotments and larger primary production (grazing) allotments, while to the north-east along Tollner Road, there is a Strategic Employment Zone that is currently used for primary production (cattle grazing).

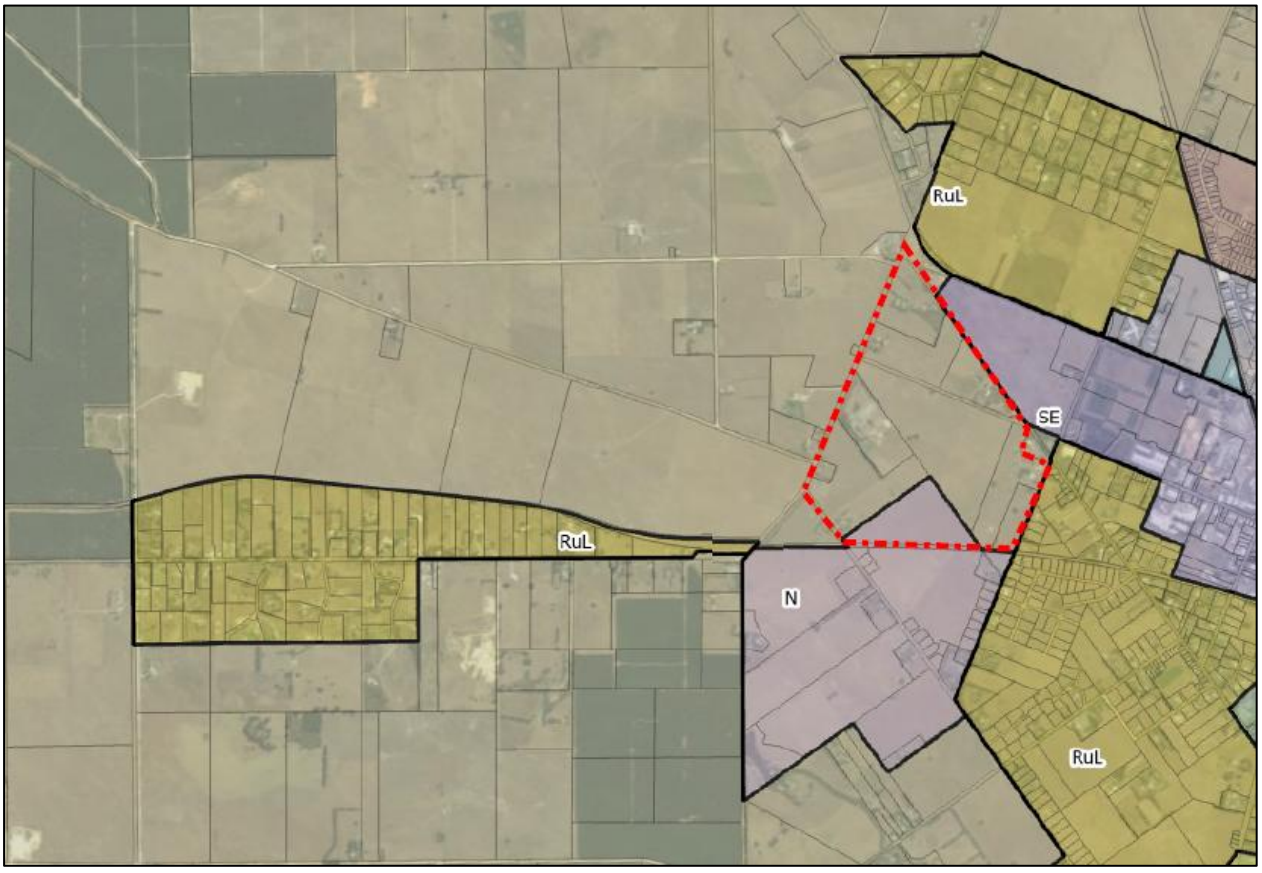
Source – SAPPA Maps

3. Existing Zoning

The zoning plan below shows the existing Rural Living & Neighbourhood Zones in relation to the subject land (delineated in a red dashed line).

Noting the properties in the Neighbourhood Zone are unlikely to be developed into 'residential' sized allotments due to a reticulated sewer service not being available and it being uneconomic to extend the sewer to service the area.

The subject land creates an ideal link to the existing Rural Living Zones to the north, east and west as shown in the zoning plan below.



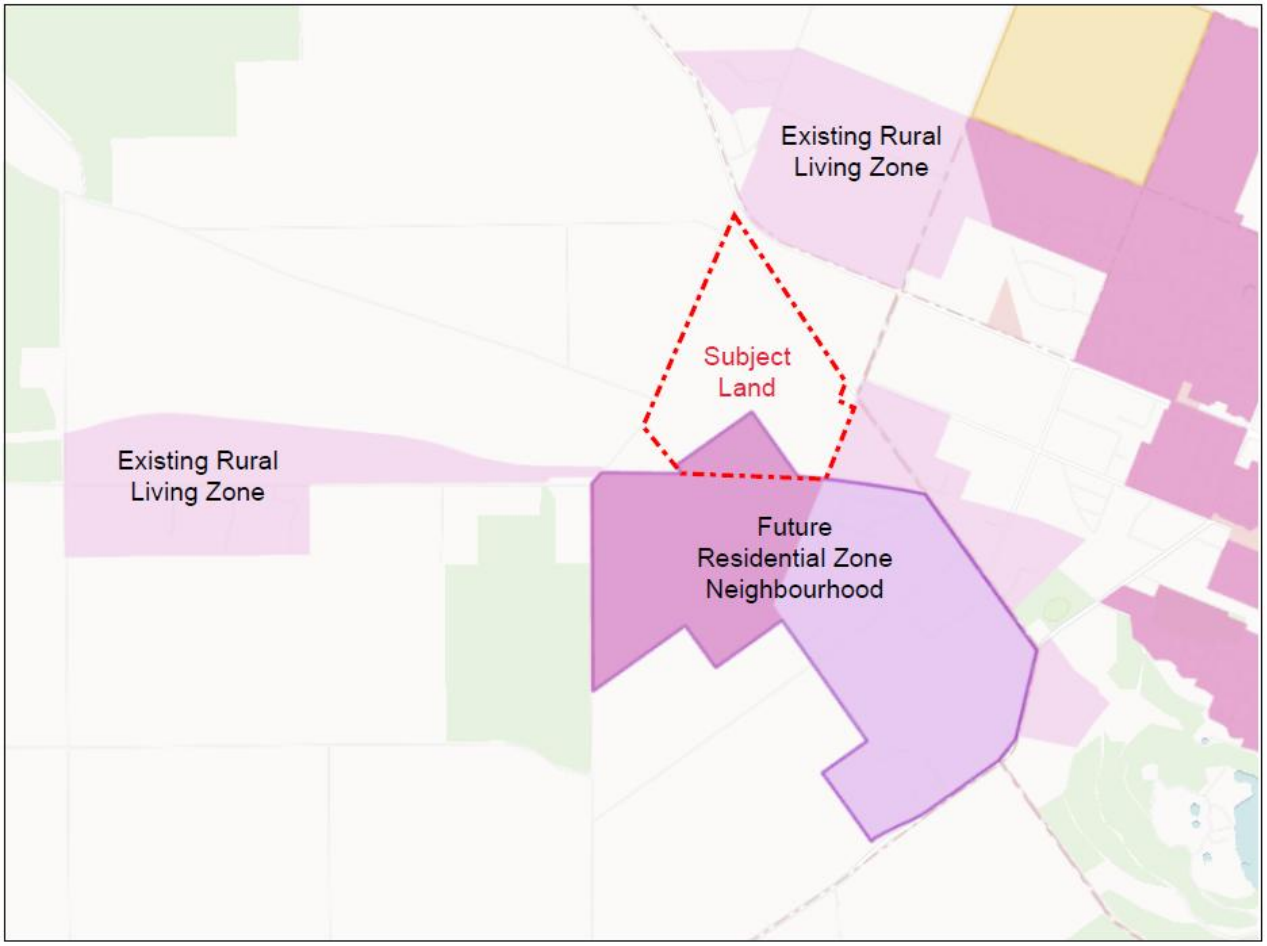
Source – SAPPA Maps

4. Draft Limestone Coast Regional Plan

It is noted the draft Limestone Coast Regional Plan does not propose any potential rezoning of the subject land.

The draft Plan proposes a greater Compton 'Future Residential' (Neighbourhood) Zone as shown in the plan below, incorporating Piece 2001 in Deposited Plan 135551 of the subject land.

Given the form of development (subdivision) currently being undertaken with the existing Neighbourhood Zone, incorporating this land into the 'Future Residential' (Neighbourhood) Zone would appear incompatible with the current form of development being undertaken.



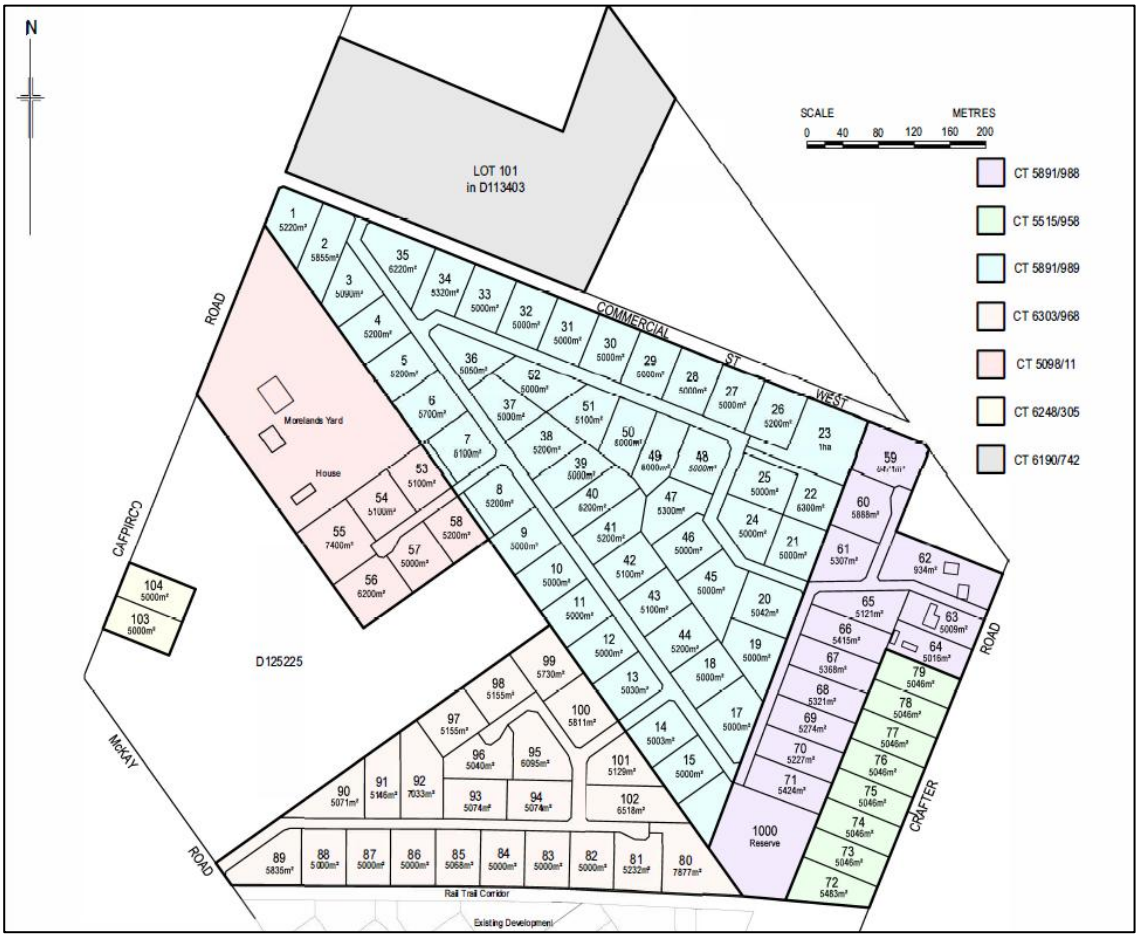
Source Map – Draft Limestone Coast Regional Plan website

5. Future Land Division Potential

The subject land offers an opportunity to link the existing Rural Living / Neighbourhood Zones and provide additional rural living allotments to service the continued growth of the greater city of Mount Gambier.

The concept land division plan below, incorporating only those properties with the subject land area providing this submission, indicates how a future subdivision of these properties could be integrated in an orderly and economic pattern of development.

The rezoning of the subject land area to Rural Living Zone would also create further subdivision of the other properties not included in the concept land division plan.



Source – Cameron Lock Surveying

6. Our Submission

We respectfully submit, the subject land be incorporated into the Limestone Coast Regional Plan and identified as a 'Future Residential' Zone (Rural Living).

We take this opportunity to thank you for the opportunity to provide a submission on the draft Limestone Coast Regional Plan for your consideration.

If you require any further information or wish to discuss this matter further, please do not hesitate to contact me at your convenience.

Yours sincerely

[redacted]rennan PSM MPIA JP
ing Professional APP20190029
Principal Consultant
FRANK BRENNAN CONSULTING SERVICES

ACCREDITED PROFESSIONAL
Planning, Development and Infrastructure Act 2016

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ABN 91 376 720 132
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16 June 2025

Planning and Land Use Services
Department for Trade and Investment
GPO Box 1815
ADELAIDE SA 5001

via: plansasubmissions@sa.gov.au

Dear Regional Planning Program Team

Submission – Draft Limestone Coast Regional Plan

I am acting for FTK Developments Pty Ltd in relation to their property at [redacted] (subject land) and make the following submission in relation to the draft Limestone Coast Regional Plan.

1. Property Details

Property Description :	Allotment 1 in Deposited Plan 122283
Certificate of Title:	[redacted]
Address :	[redacted]
Current Zoning :	Rural Zone
Current Land Use :	Primary Production (Non-Viable)

Location & Zoning Plan :

Source – Google Maps

The aerial photo below shows the subject land delineated (in part) in the yellow dashed line.

2. Character of the Locality

The locality around the subject land comprises the following –

1) To the south on the southern side of Bishop Road is land zoned Suburban Neighbourhood Zone & Golf Course Estate Zone. The Golf Course Estate land has been developed for residential dwellings along-side the golf course.
2) The Suburban Neighbourhood Zone land has a residential subdivision under construction along Kennedy Road and a land division on the southern side of Bishop Road adjacent the Suburban Activity Centre Zone.
3) To the east of the subject land in the Rural Zone, there is small scale primary production allotments, many being non-viable for primary production.
4) To the north of the subject land in the Rural Zone, the primary production allotments are larger and utilised for livestock grazing & irrigation.
5) To the west of the subject land along the northern side of Bishop Road in the Rural Zone, the form of development comprises small allotments utilised for rural living purposes in conjunction with low-scale livestock grazing. There is also a sporting facility (soccer club & pitch) in this location.

The subject land is better located in close proximity to much of Mount Gambier's social infrastructure, including the following –

- Soccer Club & Pitch – 700 metres
- Golf Club – 300 metres
- The Market Place Shopping Centre complex 1.5 kilometres
- Kindergarten – 2.1 kilometres
- School – 3.5 kilometres
- Mount Gambier Hospital – 2.6 kilometres
- Mount Gambier Airport – 10 kilometres

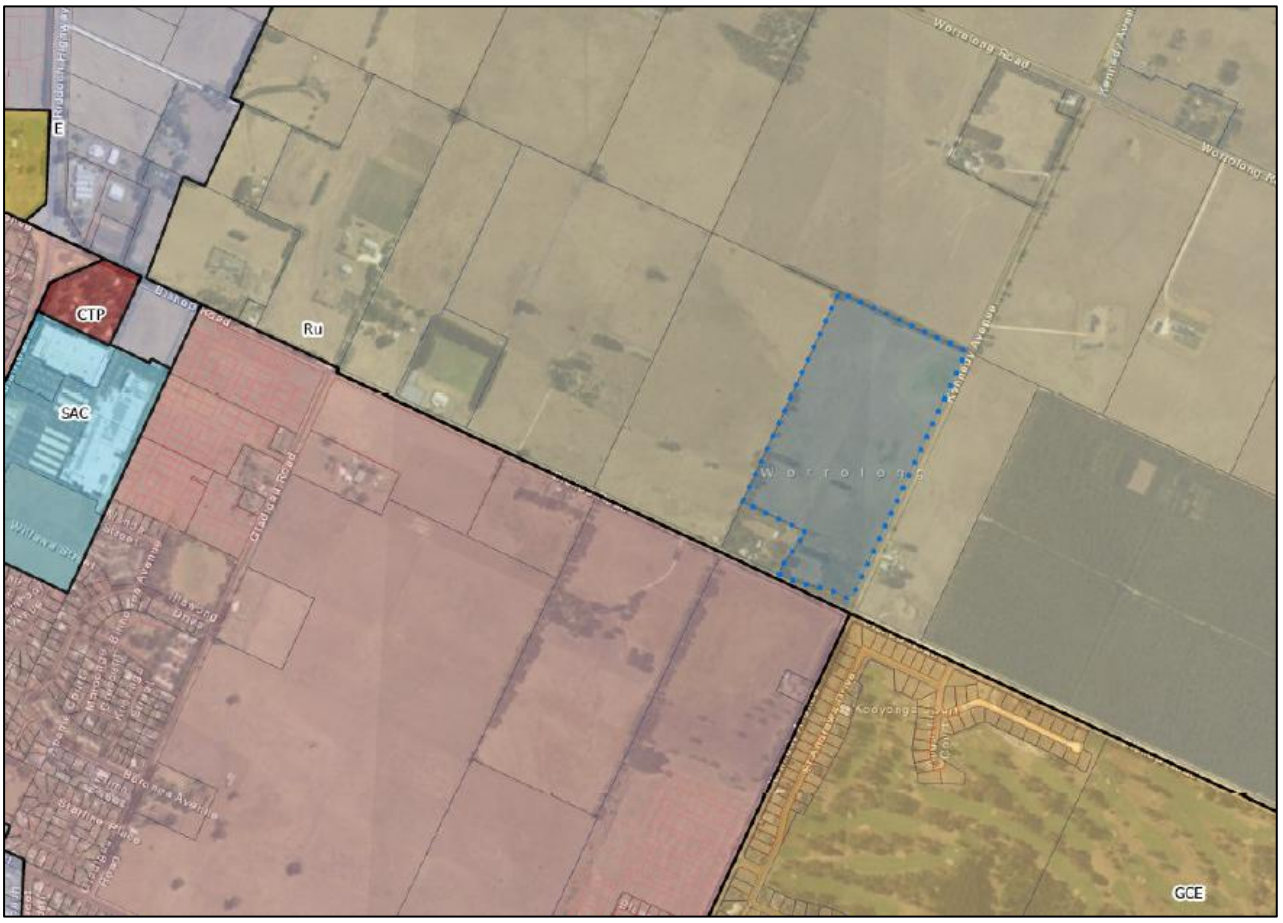
The Subject Land is well located (within 3.5 kilometres) in order to access the City's social infrastructure, including schools, sporting facilities and shopping facilities, and is well placed regarding access to the City Centre and its facilities.

The Rural Zone land described in clause 5 above is delineated in the yellow dashed line in the aerial plan below, while the subject land is delineated in the red dashed line.

Source – Google Maps

3. Existing Zoning

The zoning plan below shows the subject land (highlighted in blue) and located in the Rural Zone and the existing Golf Course Estate Zone (green) to the south-east, the Suburban Neighbourhood Zone (pink) to the south & south-west, the Employment Zone (grey) to the west and the Suburban Activity Zone (blue) to the west.



Source – SAPPA Maps

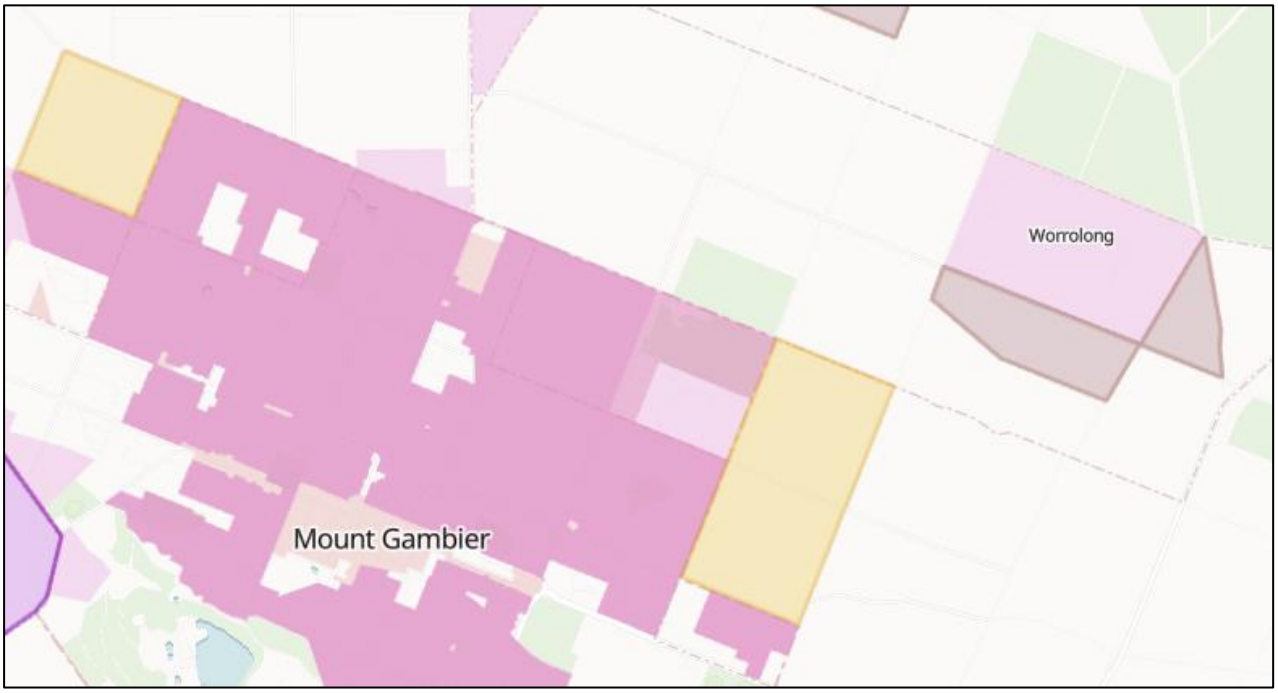
4. Draft Limestone Coast Regional Plan

It is noted the draft Limestone Coast Regional Plan does not propose any potential rezoning of the subject land or the land on the northern side of Bishop Road in the Rural Zone described above.

The draft Plan proposes a rezoning of land to the south & east of the existing Worrolong Rural Living Zone to 'Future Residential' (Neighbourhood – Rural Areas) Zone as shown in the plan below.

Further the land bound by Attamurra Road, Sycamore Road, Hawkins Road and Bishop Road in Glenburnie is proposed to be rezoned to 'Future Residential' (Neighbourhood – All Intensities) Zone.

The future development of the land proposed to be rezoned at Worrolong and Glenburnie appears to be somewhat compromised by the lack of access to essential infrastructure, reticulated water & sewer, to support residential forms of development.



Source – draft Limestone Coast Reginal Plan website

5. Our Submission

We respectfully submit, the subject land together with the land on the northern side of Bishop Road in the Rural Zone be incorporated into the Limestone Coast Regional Plan and identified as a 'Future Residential' Zone (Rural Living).

We take this opportunity to thank you for the opportunity to provide a submission on the draft Limestone Coast Regional Plan for your consideration.

If you require any further information or wish to discuss this matter further, please do not hesitate to contact me at your convenience.

Yours sincerely

[redacted]rennan PSM MPIA JP
ing Professional APP20190029
Principal Consultant
FRANK BRENNAN CONSULTING SERVICES

ACCREDITED PROFESSIONAL
Planning, Development and Infrastructure Act 2016

FRANK BRENNAN
CONSULTING SERVICES
ABN 91 376 720 132
PO Box 96
BEACHPORT SA 5280
M: [redacted]
E: [redacted]
W: www.fbcs.com.au

17 June 2025

Planning and Land Use Services
Department for Trade and Investment
GPO Box 1815
ADELAIDE SA 5001

via: plansasubmissions@sa.gov.au

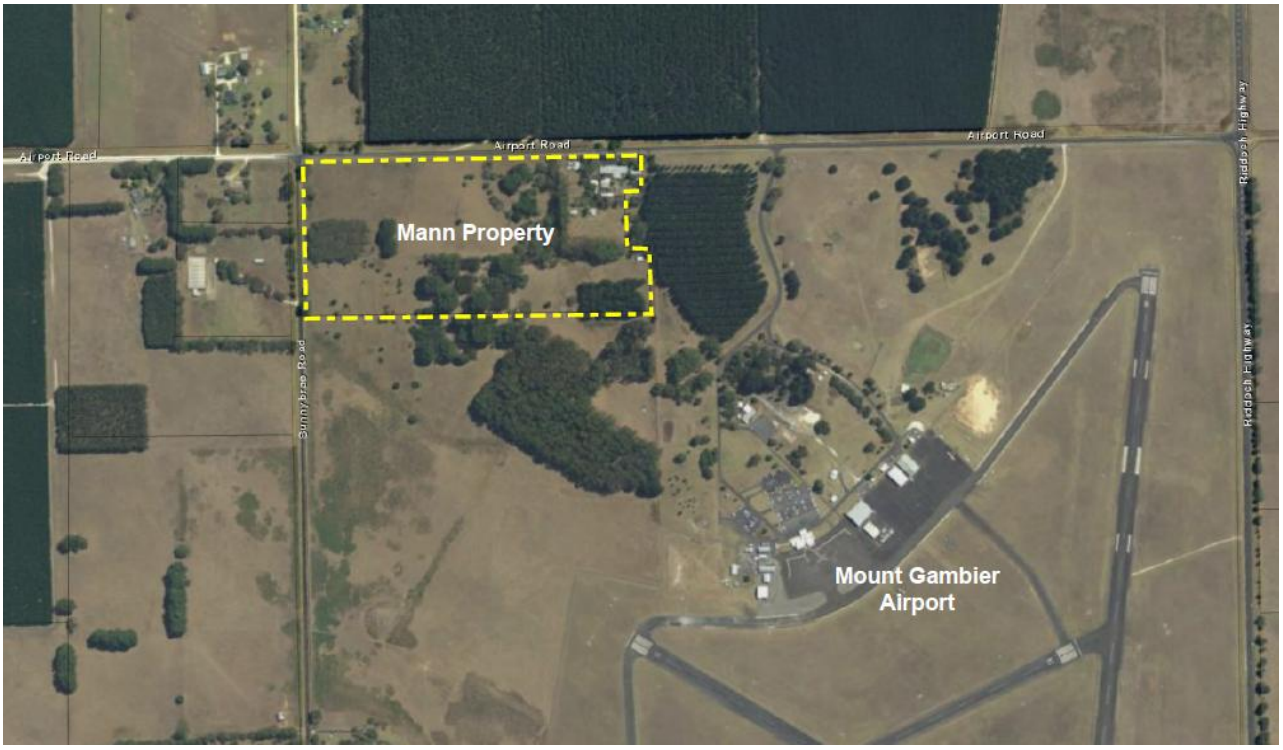
Dear Regional Planning Program Team

Submission – Draft Murray Mallee Regional Plan

I am acting for Paul Mann in relation to his property at [redacted] and make the following submission in relation to the draft Limestone Coast Regional Plan.

1. Property Details

Property Description :	Allotment 1 in Deposited Plan 22162
Certificate of Title:	[redacted]
Address :	[redacted]
Area (Ha / Acres) :	16.221 Ha / 40.082 Acres
Current Zoning :	Rural Zone / Limited Land Division Overlay / Building Near Airfields Overlay
Current Land Use :	Rural Living / Primary Production



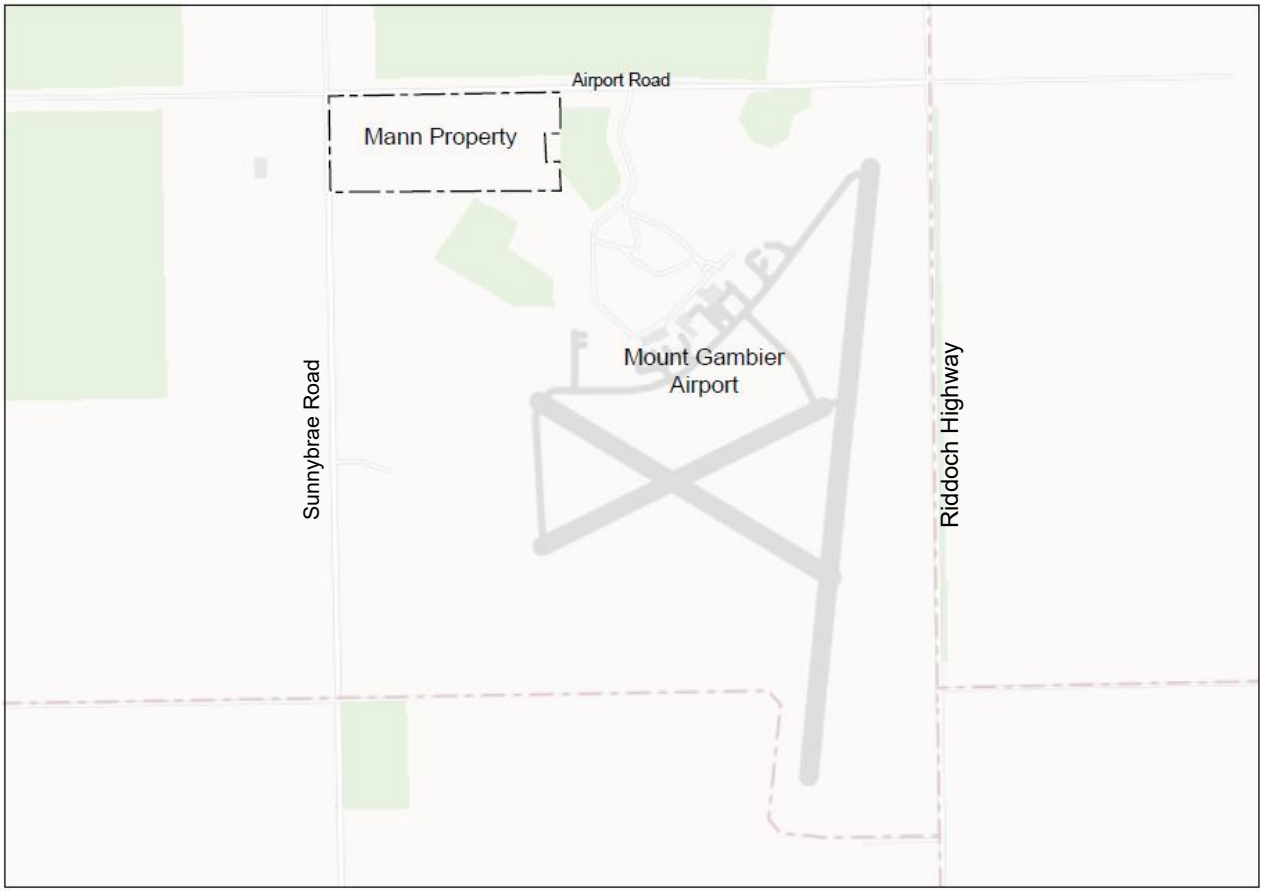
Source – SAPPA Maps

Riddoch Highway

2. Proposed Zoning – Draft Limestone Coast Regional Plan

The draft Limestone Coast Regional Plan proposes no rezoning in the locality around the Mann property as shown in the plan below.

The location of the Mann property in relation to the Mount Gambier Airport is also shown on the plan below.



Base Plan extracted from Draft Limestone Coast Regional Plan

3. Character of the Locality

The Mann property was formerly the Mount Gambier CSIRO Research Centre focusing on research associated with the region's forestry industry.

To the locality around the Mann property is characterised by commercial forest plantations to the north and west, the Mount Gambier Airport complex to the immediate south and east, while along Sunnnybrae Road to the west and north there is rural living development and small scale (non-viable) primary production allotments.

Further north of the Mann property along Sunnybrae Road there is an established timber sawmilling operation.

The form of development described above is shown in the aerial plan below

Source – SAPPA Maps

4. Mount Gambier Regional Airport Master Plan 2025-2035

The Mount Gambier Regional Airport Master Plan 2025-2035, identifies a number of long-term projects including to 'Develop Commercial Precinct Onsite' – "*There is an opportunity to diversify the Mount Gambier Regional Airport income by using a section of the 250 Ha to develop commercial allotments and lease land to businesses who wish to be located at the Airport precinct."*

The Mann property is ideally located immediately adjoining the Mount Gambier Airport complex on its southern and east boundaries, providing an opportunity for its development as a freight and logistics hub associated with the operation of the Mount Gambier Airport.

A freight and logistics hub could accommodate a range of industrial, logistical, warehousing, storage, research and training land uses associated with the Mount Gambier Airport and the penitential to become generate opportunities for the freighting of local produce to markets.

5. Our Submission

We respectfully submit, the whole of the Mann property at [redacted] be incorporated into an Employment Zone or Strategic Employment Zone in the Limestone Coast Regional Plan.

The proposed rezoning of the Mann property is shown in the plan below.

Base Plan extracted from Draft Limestone Coast Regional Plan

We take this opportunity to thank you for the opportunity to provide a submission on the draft Limestone Coast Regional Plan for your consideration.

If you require any further information or wish to discuss this matter further, please do not hesitate to contact me at your convenience.

Yours sincerely

[redacted]
Brennan PSM MPIA JP
ning Professional APP20190029
Principal Consultant
FRANK BRENNAN CONSULTING SERVICES

ACCREDITED PROFESSIONAL
Planning, Development and Infrastructure Act 2016

PLANNING AND DEVELOPMENT NEAR HIGH PRESSURE PETROLEUM PIPELINES

Purpose

To outline requirements for planning and development around high-pressure petroleum transmission pipelines and pipeline facilities under the ***Gas and Liquid Petroleum Pipelines Overlay*** and ***Gas and Liquid Petroleum Pipelines (Facilities) Overlay*** of the Planning and Design Code (Pipeline Overlays.

To familiarise Councils with the intent of the Pipeline Overlays, specifically to:

- provide more information on the types of developments that the Pipeline Overlays are intended to capture
- to promote councils to advise applicants of developments that are not likely to meet the DTS criteria to approach DEM for a section 123 agreement.

Scope

The pipelines covered by this factsheet are petroleum transmission pipelines that are licenced and regulated by the Department for Energy and Mining under the ***Petroleum and Geothermal Energy Act 2000*** (PGE Act).

Pipelines which form part of the natural gas distribution network are not included within the scope of the Pipeline Overlays.

SOUTH AUSTRALIA

Government of South Australia
Department for Energy and Mining

High pressure petroleum pipelines in South Australia

In South Australia high pressure pipelines provide the natural gas for gas fired power stations that generate 60% of the State's peak power requirements, in addition to residential and industrial gas use.

Gas supply to South Australia is either from gas the Moomba Gas Plant in the state's north-east via the Epic Energy owned Moomba to Adelaide Pipeline, or from the Otway Basin via the SEA Gas Port Campbell to Adelaide Pipeline. Each of these pipelines transports about half of South Australia's gas requirements.

Other major pipeline laterals in the state include:

- The APA operated Riverland and Berri to Mildura pipeline, which also feeds Murray Bridge;
- The APA owned SESA Pipeline and Epic Energy South East Pipeline System that deliver gas into Mount Gambier and other industrial customers in the South East region;

There are also pipeline laterals that supply gas to Port Pirie and Whyalla, as well as other townships and major industrial customers.

A transmission pipeline also transports liquid petroleum from Moomba to Port Bonython, where it is processed for export. This pipeline is owned by Santos.

These pipelines are depicted on the map in Figure 1.

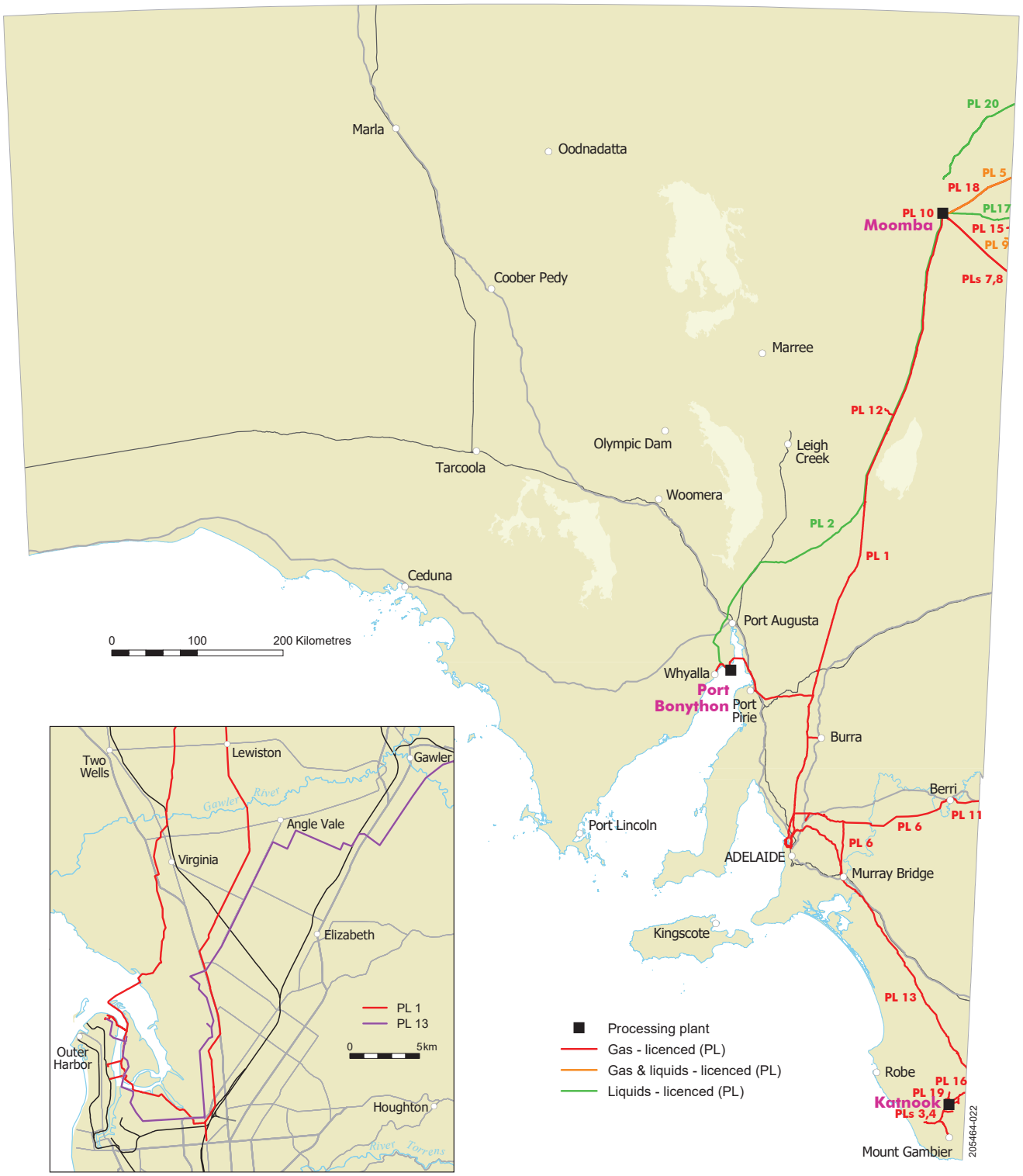


Figure 1 Transmission Pipelines in South Australia.

Licenced pipelines can be viewed on the South Australian Resources Information Gateway (SARIG) map.

Pipeline safety and compliance

High pressure pipelines are the safest way to transport natural gas and liquid petroleum. There have been no fatalities due to a pipeline failure in Australia, and very few loss of containment events have occurred.

It is a requirement of the PGE Act that high pressure gas and liquid petroleum pipelines must be designed, constructed, commissioned, maintained and operated in compliance with *Australian Standard (AS) 2885 Pipelines – Gas and Liquid Petroleum.* Central to AS 2885 is the Safety Management Study (SMS) – an assessment of the risks associated with the operation of a pipeline, which carefully considers the threats to the pipeline as well as the consequences of a pipeline failure at each section along the pipeline. The requirements to manage the integrity of the pipeline and minimise the risk of its operation are determined by considering land use in the area immediately adjacent to the pipeline (to identify the threats to the pipeline) as well the areas that would be impacted by a pipeline rupture and ignition (to identify the consequences). Measures are identified and implemented to control the threats and minimise the consequences.

Pipeline licensees have an obligation to continually review the SMS and ensure controls are implemented to manage any increased risks. The most effective public safety outcomes are achieved by minimising potential for exposure (eg. minimising service crossings and avoiding sensitive landuse in the vicinity of the pipeline) and implementing engineering controls (eg. pipeline slabbing). These controls are more effective than procedural controls, such as signage and patrolling at minimising risk.

Planning and Development Requirements

The Pipeline Overlays have been developed to help manage the risk to public safety, the environment and security of supply for the encroachment of developments on these high-pressure gas and liquid petroleum pipelines, providing alignment with the PGE Act and AS2885.

The combination of the spatial extent of the Pipeline Overlays, and the performance outcomes/deemed-to-satisfy (DTS) criteria aim to capture those developments which may potentially introduce new threats to the pipeline or increase the consequence of a pipeline failure and provide a referral to DEM for further assessment.

For the Gas and Liquid Petroleum Pipelines Overlay:

- Performance Outcome 1.1 is worded to identify types of development that will increase the public safety consequence of a pipeline failure, such as where the density of occupation increases, or the development contains populations that may not be able to react quickly in the event of a pipeline failure – such as schools or retirement villages.
- Performance Outcome 1.2 limits the development of hospitals and emergency services facilities within the pipeline overlay to ensure a pipeline incident does not compromise emergency response capability.
- Performance outcome 1.3 aims to capture development that has the potential to escalate the consequence of a pipeline failure such as storage or production of toxic or flammable goods. This would typically be quantities of dangerous goods that may have off-site impacts if they were to escape or ignite (i.e. those that would potentially trigger the Major Hazard Facility notification thresholds under the WHS Act 2012).

Table 1 Performance Outcomes of the Gas and Liquid Petroleum Pipelines Overlay

Performance Outcome (PO)	
PO 1.1 Community exposure to a potential hazard from the failure of a gas of liquid petroleum pipeline is mitigated by locating development that may accommodate or result in large congregations of pipeline, buildings for housing and/or caring for vulnerable people and community facilities outside areas that pose an unacceptable risk to protect life.	**DTS/DPF 1.1** Development satisfied one of the following: (a) It does not comprise: i. Caravan or tourist park ii. Educational establishment iii. Buildings comprising 3 or more building levels iv. Land division creating allotments under 1ha for residential purposes (except where the existing allotment is less than 1ha) v. Prison vi. Pre-school vii. Residential park viii. Retirement facility ix. Student accommodation x. Supported accommodation xi. Shop or shops with a gross leasable floor area of 1000m^2 or greater xii. Tourist accommodation xiii. Stadium (b) A class of development referred to in part (a), or any combination thereof, which will occur in accordance with an agreement under section 123 of the Planning, Development and Infrastructure Act, 2016.
PO 1.2 Emergency service and major community health related facilities are located outside areas where a gas or liquid petroleum pipeline failure may disrupt ongoing operations to maintain the response capacity in the event of an emergency.	**DTS/DPF 1.2** Development does not comprise of any of the following: (a) Emergency services facility (b) Hospital.
PO 1.3 Development involving the manufacture, collection, handling or bulk storage of flammable, explosive, or otherwise hazardous materials is located and designed to avoid escalating the potential for and effects of a gas or liquid petroleum pipeline failure.	**DTS/DPF 1.3** Development satisfies one of the following: (a) It does not comprise: i. General industry ii. Special industry iii. Landfill iv. Renewable energy facilities v. Electricity substation vi. Fuel depot vii. Retail fuel outlet viii. Store ix. Warehouse x. Waste treatment facility (b) A class of development referred to in part (a), or any combination thereof, which will occur in accordance with an agreement under section 123 of the Planning, Development and Infrastructure Act, 2016.

The single performance outcome for the Gas and Liquid Petroleum Pipelines (Facilities) Overlay is to protect land users from noise and other impacts surrounding pipeline facilities, specifically those facilities intended for use in emergency situations.

Table 2 Performance Outcome of the Gas and Liquid Petroleum Pipelines (Facilities) Overlay.

Performance Outcome (PO)	
PO 1.1 Development (including land division) does not present a risk to public health and safety due to any of the following: (a) continuous noise associated with pipeline facilities used for energy transportation that exceeds the Environment Protection (Noise) Policy (b) potential for occasional noise associated with high pressure venting.	**DTS/DPF 1.1** Development (including land division creating additional allotments for such purposes) comprises one or more of the following: (a) open space (b) roadways (c) a class of development that will occur in accordance with an agreement under section 123 of the Planning, Development and Infrastructure Act, 2016 (d) a dwelling or ancillary building/structure on an allotment approved for residential purposes.

Where a development does not meet the Performance Outcome, further assessment needs to be undertaken to ensure that the operation of the pipeline continues to comply with the requirements of AS 2885 and to identify any additional controls or modifications to the pipeline or development that may be required.

Referral to DEM

Where a Pipeline Overlay triggers a referral, DEM will liaise with the pipeline operators to determine if the development:

- has the potential to impact on the ability of the pipeline to continue to operate safely
- has the potential to adversely impact upon the lawful continued operation of the gas or liquids pipeline or facility.

DEM will consider both the changes to the land use (as triggered by the Pipeline Overlays) as well as the potential for increased threats in the direct vicinity of the pipeline. This includes construction work adjacent to the pipeline during the development works, or maintenance and repair of services installed across the pipeline during their operational life.

It is likely that an SMS will be required for a development that proposes a change of land use from what the pipeline was originally designed, or if substantial new threats are introduced. In this case, the pipeline licensee will contact the developer to coordinate a workshop to review the risks specific to the development in question.

The SMS will allow conditions to be tailored to the specific development. If an SMS cannot be undertaken (i.e. due to time constraints or lack of information available at the time of referral) the conditions may be more conservative to account for uncertainty.

Other studies may also be required - such as to determine design requirements to minimise electrical interference from adjacent high voltage transmission cables or electricity generation installations. Electrical interference can accelerate corrosion and cause premature failure of the pipeline if not controlled.

Condition examples

If the SMS process identifies major changes to the development are required to manage the risk – such as to move sensitive developments or redesign interfaces with the pipeline – it is likely that DEM will refuse the development. For this reason, it is preferred that these sorts of development issues are identified prior to submission of the development application, and that developers get in touch early so that if needed they can progress through the Section 123 / preliminary agreement process to avoid uncertainty and optimize outcomes.

Other controls to manage threats based on the SMS outcomes can be agreed as conditions in a preliminary lodgment agreement or may become conditions of the referral. These controls loosely fall into three categories:

- Development design requirements – e.g. minimising the number of crossings, optimizing the pipeline crossing design for safety, incorporating slabbing of the pipeline at high risk areas.

- Requirements to be incorporated into the construction management plan – e.g. pipeline operator notification and supervision, exclusion zones, restrictions on type or sizes of construction equipment that can be used in the vicinity of the pipeline
- Controls to be implemented by the Licensee – e.g. additional signage, third party awareness, increased patrols

Key Contacts

Energy Resources Division,
Department for Energy and Mining
Technical Regulator

Michael Malavazos
Dire ng Operations
T
E or
DE
W https://www.energymining.sa.gov.au/industry/energy-resources

SEA Gas Pty Ltd
Pipeline Licensee
Port Campbell to Adelaide Pipeline – PL 13

Michael Jarosz
Se Engineer
T
M
E or
dev om.au
W www.seagas.com.au

Epic Energy SA
Pipeline Licensee
Moomba to Adelaide Pipeline System – PL1
South East Pipeline System – PL 3 & 4

Adrian Tero
Risk and Compliance Advisor
T
E
W au/

APA Group
Pipeline Operator
Riverland Pipeline – PL 6
Berri Mildura Pipeline – PL 11
Virginia Gate Station – SFL 12

Julie Dixon
Technical and Regulator Compliance –
Ne s
T
E @apa.com.au
W https://www.apa.com.au/

Santos Limited
Pipeline Licensee
Moomba to Port Bonython Liquids Pipeline – PL 2

Richard Holroyd
Se Integrity
T
E
W

References

- APA Group guidelines for Planning and Landscape in the pipeline easement:
  - For reference, APA Group have prepared this guideline which provides guideance on the preferred treatment of its easements, which can be optimised to provide valuable greenspace while maximising the safety of the pipeline asset.
- South Australian Resources Information Gateway (SARIG) map. This interactive map can be used to view and download the pipeline licence alignments and identify the relevant licensee.

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Department for Energy and Mining

energymining.sa.gov.au

Acknowledgement of Country

As guests on Aboriginal land, the Department for Energy and Mining (DEM) acknowledges everything this department does impacts on Aboriginal country, the sea, the sky, its people, and the spiritual and cultural connections which have existed since the first sunrise. Our responsibility is to share our collective knowledge, recognise a difficult history, respect the relationships made over time, and create a stronger future. We are ready to walk, learn and work together.

16/10/2022-205689

Attention: Regional Planning Program Team
Planning and Land Use Services
Department for Trade and Investment
GPO Box 1815,
ADELAIDE SA 5001

17 June 2025

Submission - Draft Limestone Coast Regional Plan

To the Regional Planning Program Team,

Potentia Energy appreciates the opportunity to provide a submission to the South Australian Government in response to the Draft Limestone Coast Regional Plan. Potentia Energy is currently progressing with the development of a large-scale Battery Energy Storage System (BESS) at Compton to the west of Mount Gambier.

This submission outlines the relevant considerations of the Draft Limestone Coast Regional Plan in relation to the future development and operation of the proposed BESS.

Background

Potentia Energy is developing the Blanche BESS project (the BESS) at 25 McKay Road Compton (CT 6248/306) within the District Council of Grant (refer to Figure 1 and Figure 2). The site is strategically located near the ElectraNet Blanche Substation which allows for the direct and efficient connection to the National Energy Market.

The proposed BESS has a capacity of up to 125MW and will assist to stabilise the regional power supply and enable the integration of increased renewable energy sources into the grid.

The project has an estimated capital cost of approximately $240 million and is anticipated to create approximately 100 construction jobs and 5 operational roles, which will result in local economic and employment benefits. Subject to obtaining relevant approvals, construction is planned to commence Q2 2026 with the BESS operational by Q4 2027.

Potentia Energy has lodged an Associated Infrastructure Licence Application for the Blanche BESS under the *Hydrogen and Renewable Energy Act 2023* (HRE Act) on 16 August 2024 . This application is currently progressing through the HRE Act assessment process which is being administered by the Department for Energy and Mining.

To inform the BESS design and Licence Application, a range of studies were undertaken to assess and mitigate potential interface impacts of the proposed BESS to the surrounding

community, having regard to the existing development and anticipated future development, as guided by the current zoning of the land adjoining the site.

It is acknowledged that changes to the surrounding land use has the potential to impact the design and operations of the proposed BESS.

In addition to the Draft Limestone Coast Regional Plan (Draft LCRP), a review of the South Australian Planning and Design Code (the Code) and the District Council of Grant's Strategic Land Use Priorities review has been undertaken to inform this submission. The relevant consideration of these documents, applicable to the proposed BESS site and surrounding area, are summarised below.

Figure 1 Proposed Blanche BESS Site and Locality

Suite 23.05,
One International Towers 100 Barangaroo Ave,
Sydney NSW 2000.
potentiaenergy.com.au

Figure 2 Proposed Blanche BESS Render

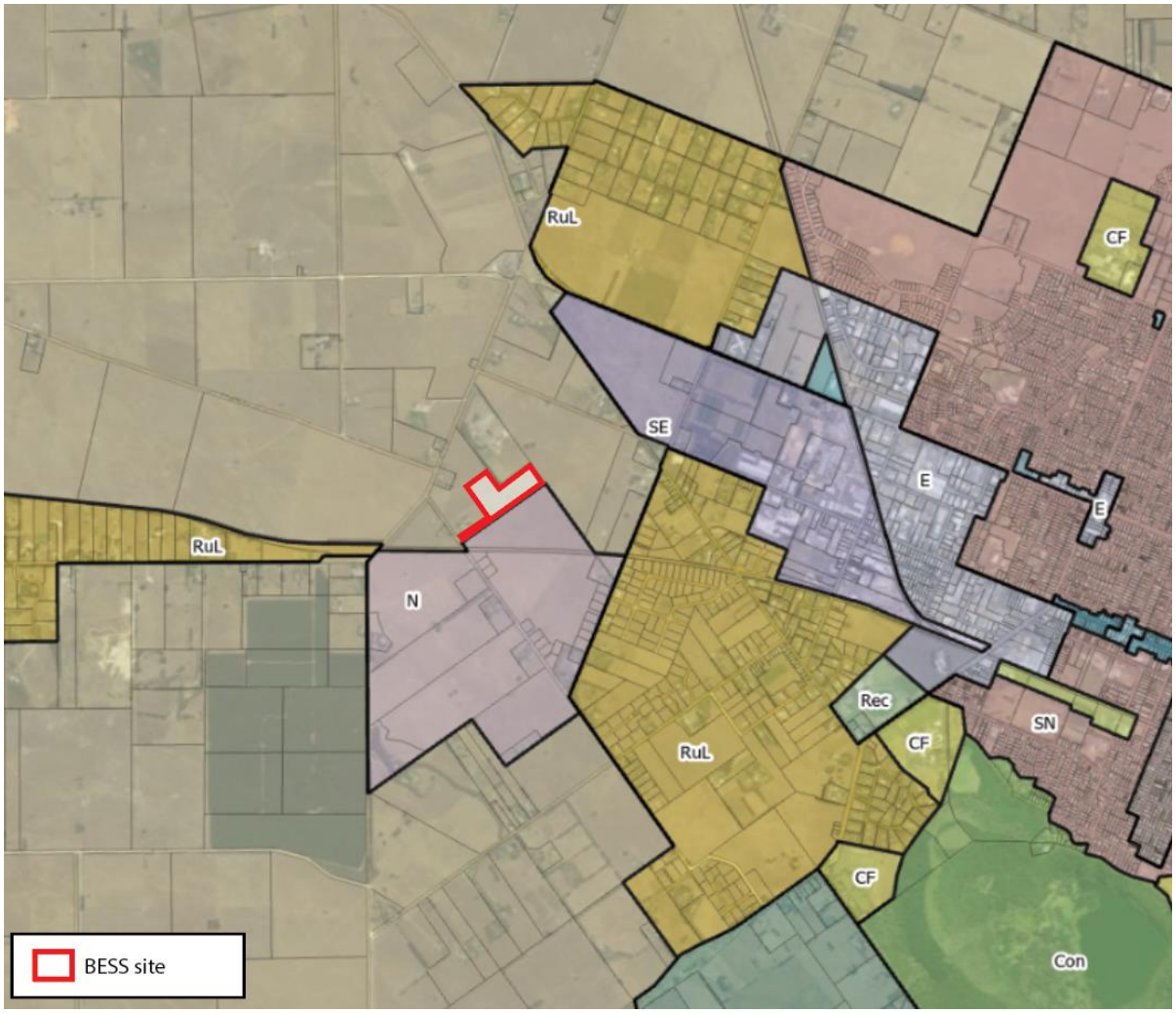
Planning and Design Code

Whilst the proposed BESS is being assessed under the HRE Act, the proposed BESS is sited within the Rural Zone of the Code. Renewable energy facilities (which include battery storage facilities within its definition) are an envisaged land use within the Zone.

As illustrated on Figure 3, the existing zoning surrounding the proposed BESS site includes principally Rural zoned land, except for a Neighbourhood Zone which immediately abuts the south-eastern boundary of the proposed BESS site. Rural Living Zones exists to the east and west of the Neighbourhood Zone.

The adjoining Neighbourhood Zone is largely undeveloped and is isolated from the urban boundary of Mount Gambier. We understand that the current zoning is a legacy from the District Grant of Development Plan which included this land within the Residential Zone – Mount Percy Golf Course Policy Area. The intent of the previous zoning was to accommodate the development of the Mount Percy Golf Course residential and tourist accommodation development. We understand that the golf course is not being proceeded with, and a staged residential land division has been approved over the land adjacent to the north of the Blanche Substation within the Zone. Only stage one of the land division has been progressed.

Figure 3 Zoning surrounding proposed Blanche BESS (SAPPA, 2025)



The District Council of Grant Strategic Land Use Priorities Plan

The District Council of Grant's Strategic Land Use Priorities Plan, published in October 2024, was prepared to review the supply and demand of residential and industrial land within District Council of Grant to safeguard future growth, as well as to provide accurate and up-to-date information to inform the Draft LCRP.

The Strategic Land Use Priorities Plan identifies that neither the Neighbourhood Zone or Rural Living Zone at Compton is well serviced by infrastructure and recent land divisions have created allotments between 3,000 square metres and 5,000 square metres.

Within the Residential Growth Recommendations, the following Code Amendment was identified:

'Pursue policy for land at Compton which consolidates the current Rural Living Zone and Neighbourhood Zone into a single Rural Neighbourhood Zone with a minimum site area TNV of 1,300 square metres and a policy requirement for an average allotment size across land divisions of 1,800 - 2,000 square metres together with a requirement for all allotments of less than 3,000 square metres to be connected to a reticulated wastewater treatment system.'

Draft Limestone Coast Regional Plan

The benefits of energy storage development are highlighted in the Draft LCRP. Specifically, the Energy long-term objectives (1 and 5) seek to facilitate renewable energy generation and storage to support the ongoing provision of sustainable, reliable and affordable energy options that meet the needs of community.

The Draft LCRP identifies a Future Residential Area at Compton which includes the existing Neighbourhood Zone and adjoining Rural Living Zone to the east (Refer to Figure 4). The proposed BESS site adjoins the north-western boundary of the proposed Future Residential Area.

The purpose of the Future Residential Area is to identify land for future residential growth to support the Housing Supply and Diversity long-term strategic objectives, which include:

a. Provide an adequate supply of development-ready and zoned land that can accommodate housing and employment growth over a 30-year period.

b. Coordinate housing growth with infrastructure by concentrating development within identified townships and settlements.

c. Increase opportunities for well-located and well-designed housing to support the needs of a diverse range of people.

d. Monitor land supply and demographic trends to ensure sufficient land is available to support a growing population.

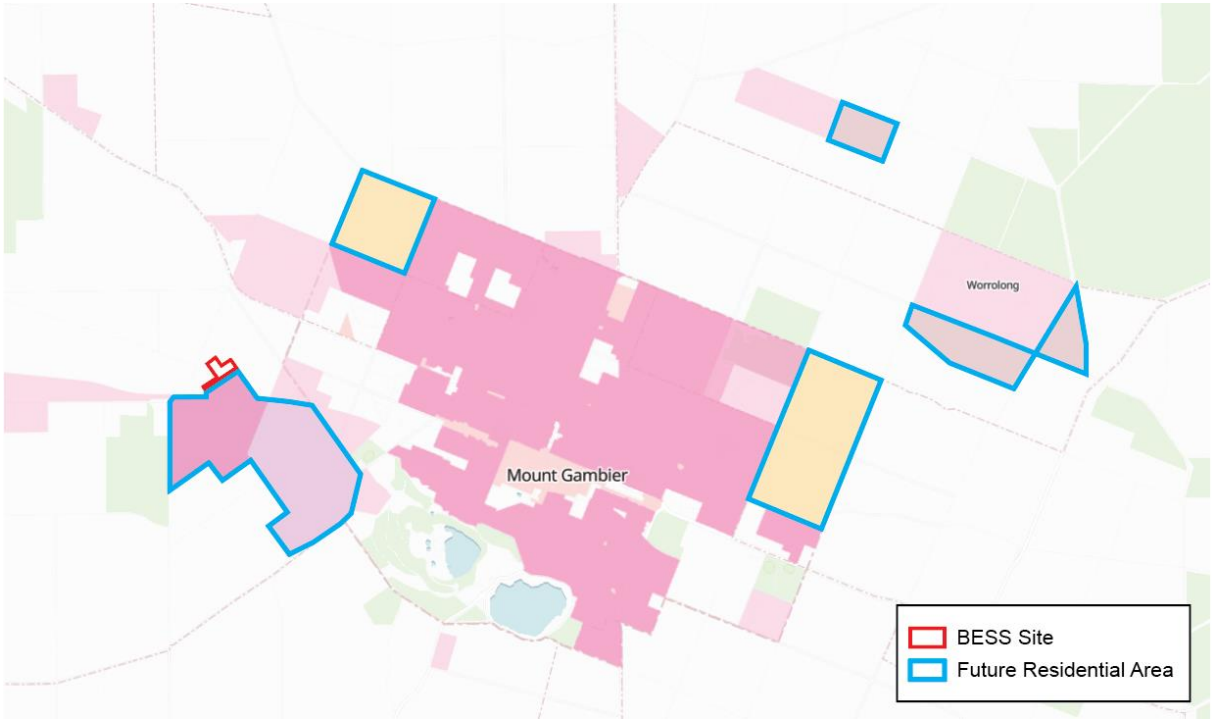
The land supply data within the Draft LCRP indicates that the current residential zoned land within the region, and within and surrounding Mount Gambier, is sufficient to accommodate the projected future growth demand for in excess of 30 years.

Consistent with Council's Strategic Land Use Priorities Plan, the Draft LCRP includes the following recommended action:

'Investigate appropriate land use outcomes in Compton to plan for future projected housing growth, identify suitable densities and locations for development to occur, local infrastructure and service requirements and delivery timing to inform updates to the Regional Plan.'

Suite 23.05,
One International Towers 100 Barangaroo Ave,
Sydney NSW 2000.
potentiaenergy.com.au

Figure 4 LCRP Future Residential Layer surrounding Mount Gambier (LCRP, 2025)



Summary

The development of the proposed BESS supports the Draft LCRP objections in relation to the provision of additional energy storage to achieve ongoing sustainable, reliable and affordable energy options that meet the needs of local community.

The proposed BESS has been appropriately sited within the Rural Zone and designed to mitigate potential interface impacts to the surrounding community, having regard to the existing development and anticipated future development within the adjoining Neighbourhood Zone.

The Draft LCRP identifies a Future Residential Area adjacent to south-east of the proposed BESS site which aligns with the current zoning of the land. Whilst not contemplated by the Draft LCRP, any changes to the Future Residential Area and subsequent further encroachment of sensitive land uses, may impact on the design, operation and viability of the proposed BESS.

In recognition of the surplus residential zoned land in Compton and the wider Limestone Coast region, as outlined in the Draft LCRP, no further expansion of the Future Residential Area boundary at Compton is warranted.

Further, given the infrastructure limitations that exists within the existing Compton Neighbourhood Zone, Potentia Energy supports Council's proposed review of the development density policy, as prescribed in the current zone.

Suite 23.05,
One International Towers 100 Barangaroo Ave,
Sydney NSW 2000.
potentiaenergy.com.au

Should any changes to the Future Residential Area boundary at Compton be proposed as part of the finalisation of the Limestone Coast Regional Plan, we request the opportunity to be further consulted.

Yours faithfully,

Signed by:
[redacted]
F66BD27D848E40F...

Werther Esposito

Chief Executive Officer

Potentia Energy

Suite 23.05,
One International Towers 100 Barangaroo Ave,
Sydney NSW 2000.
potentiaenergy.com.au