BARWON SOUTH
WEST REGIONAL

DAIRY

SUPPLY CHAIN STUDY

INVESTMENT PROSPECTUS

This Barwon South West Regional Dairy Supply Chain Investment Prospectus was prepared by:

Supported by:

For the Shire Councils of the South West Dairy Region

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INTRODUCTION AND BACKGROUND

The Investment Prospectus for the Barwon South West Dairy Supply Chain Study outlines the investment case for a $317.5 million investment into the road network in South West Victoria. This network supports Australia's largest dairy production region, responsible for 24% of Australia's milk production.

The freight task needed to transport production inputs, milk and final goods to market is significant and costs industry around $345 million per annum, around 29% of total expenditure. The road network across the region as well as the entry and exit points to the region are critical to the competitiveness of the industry.

The work to develop this prospectus has strong industry support, having been prepared in consultation and conjunction with all levels of the industry supply chain.

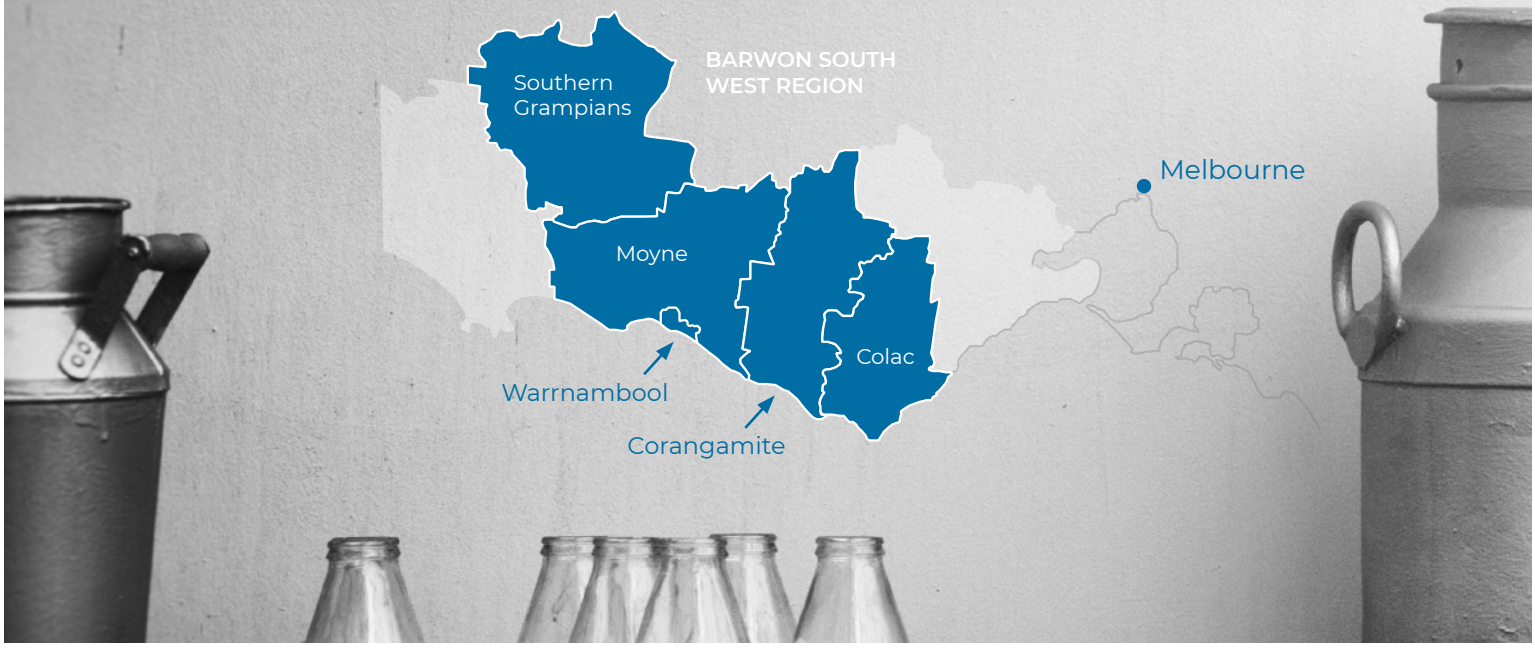
THE PROSPECTUS DETAILS:

- The prospectus details: Current freight task, and the mix between production inputs and final products
- Expected growth in the freight task over the next 25 years, as the dairy industry in the region seeks to increase production and processing by 20% to around 2.5 billion litres per annum
- The economic scale and contribution of the industry
- Key findings from the research undertaken to support the investment, details road conditions
- Positive impact the investment will make to the industry's competitiveness
- Positive economic benefits to the State from the investment
- Details of the recommendations and the principles that have led to the final investment recommendation
- Investment priorities and time-frames for investment are also included.

The Project Control Group (PCG) comprised industry representatives as well as members of State and Local Government. This prospectus is supported by several background and research documents that have been prepared by the PCG supporting this year long research project.

PROJECT STUDY AREA

The project study area is contained within the broader Barwon South West Region and includes the shire's of Southern Grampians, Moyne, Corangamite and Colac Otway.



SIGNIFICANCE OF DAIRYING **IN THE SOUTH WEST**

Approximately **1,300** farms

Production of **2.050 billion litres**

392,00 cows

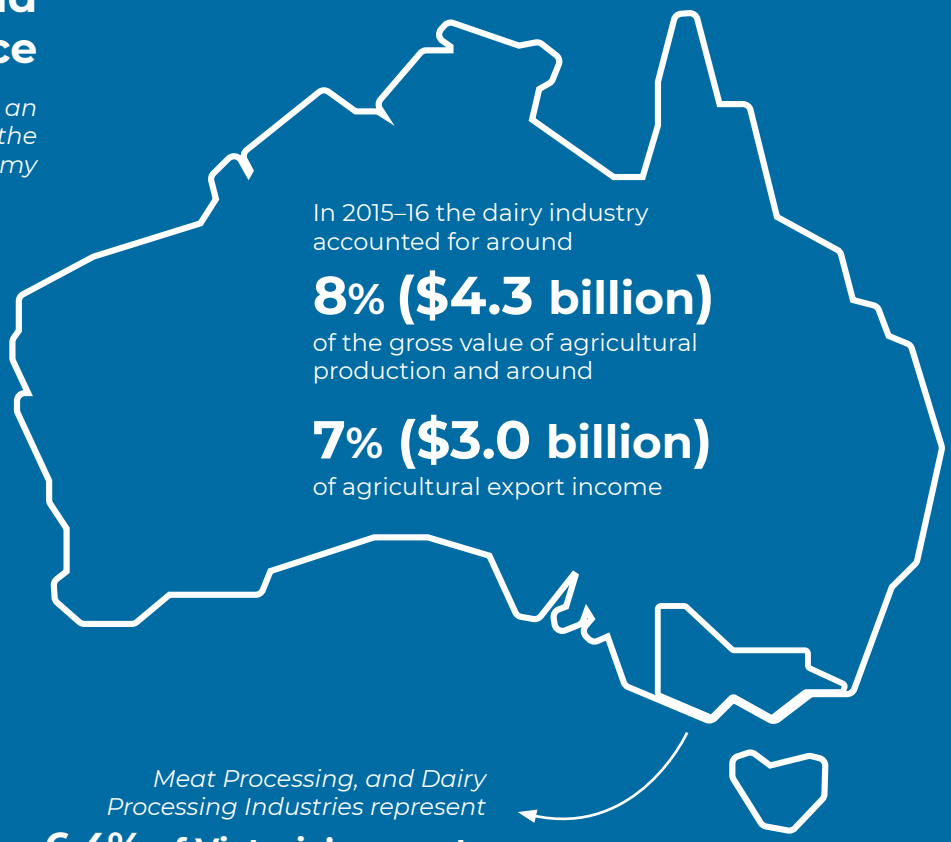
24% of national milk production

27% of Australia's dairy exports

6,800 people employed on farm

Industry of **National and State significance**

The dairy industry makes an important contribution to the Australian economy



In 2015–16 the dairy industry accounted for around

8% ($4.3 billion)

of the gross value of agricultural production and around

7% ($3.0 billion)

of agricultural export income

Meat Processing, and Dairy Processing Industries represent

6.4% of Victoria's exports

The study area is the **LARGEST MILK PRODUCTION** area in the State

ECONOMIC CONTRIBUTIONS OF **THE DAIRY INDUSTRY** WITHIN THE STUDY AREA

Based on economic modelling completed by Federation University as part of this project, the dairy industry in the study area is responsible for:

$361 million
value added per annum

7,300+
direct employees

$257+ million
Exports per annum

$30 million
Annual taxes paid

The dairy industry is the largest single employer in the study area

~$30 million
Private sector investment per annum

$345 million
Annual haulage related costs (29% of expenditures)

KEY FINDINGS

EXPECTED GROWTH IN MILK PRODUCTION AND THE IMPACT ON TRANSPORTATION

Given the changes to farming practices required to achieve a 20% increase in tonnes of milk produced (mT), the following growth in the annual freight task is expected:

Growth in tonnage carried into and out of region increases:

Milk	**3.3mT to 3.9mT**	**↑ 20%**
Inbound supply tonnage	**2.1mT to 4.2mT**	**↑ 100%**
TOTAL	**5.4mT to 8.2mT**	**↑ 52%**

To achieve 20% increase in milk production and processing by 2045 requires

additional 47% of gross tonnage to be carted across the network

In terms of total tonnes carried across the network (assuming no change in underlying truck routing over a 25 year poeriod):

Milk	**40.3mT to 48.6mT**	**↑ 20%**
Inbound supply tonnage	**21.2mT to 41.2mT**	**↑ 100%**
TOTAL	**61.1mT to 89.8mT**	**↑ 47%**

KEY FINDINGS

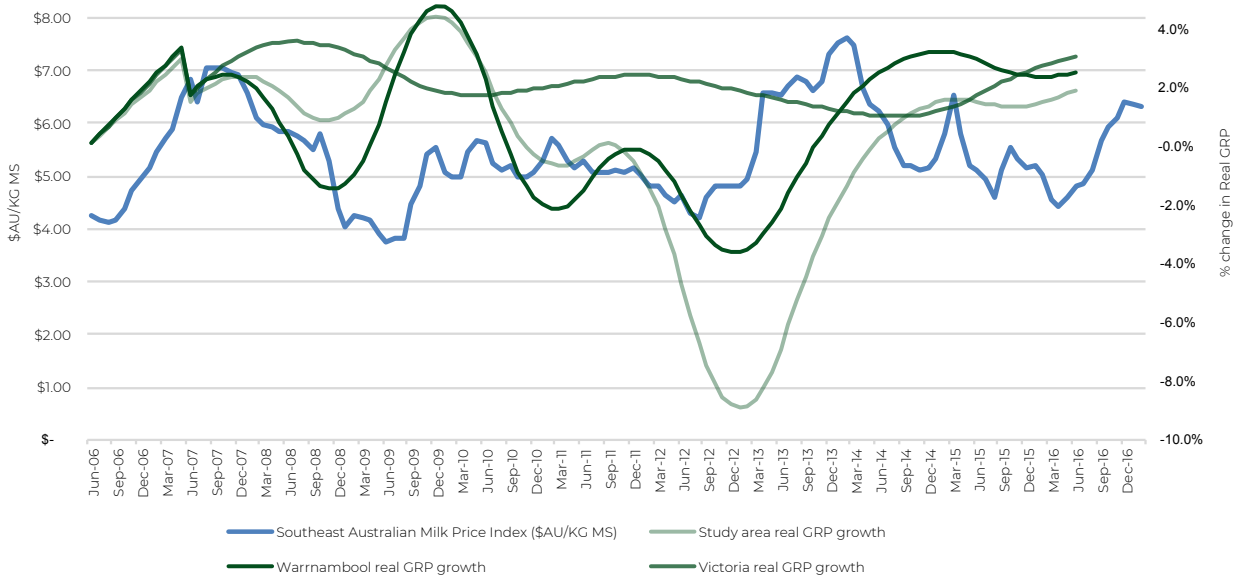
BARWON SOUTH WEST ECONOMY IS SIMILAR TO A COMMODITY BASED ECONOMY

The BSW economy should be viewed as commodity-based economies, subject to the impact of the global milk price. This clearly increases economic risks as:

- Milk price is volatile and subject to international considerations
- The remainder of the local economy is so wedded to agriculture that the economy is undiversified and narrow
- Large parts of the economy have developed to support agriculture, they are dependent on it.

Should the milk price fall, or the industry decline due to other factors such as a reduction in competitiveness, economic activity will contract across the regional economy, not just in the agricultural and related sectors but also in service and consumer parts of the local economy as incomes (capacity to spend) are reduced and the value of work flowing through the value chain declines.

FIGURE 1: GRP GROWTH AND MILK PRICES



01. The relationship between milk prices and economic growth is delayed, there being a lag of around 6 – 12 months between a rise or fall in economic growth arising from a rise or fall in the milk price, but the causal link is clear – the economic growth of the BSW region is tied closely to milk prices.

02. Dairy industry is a major driver of the remainder of the BSW economy through supply chain linkages and through providing incomes for spending in the local economy.

The Victorian economy does not have the same obvious relationship.

KEY FINDINGS

MILK PRICE IMPACTS EMPLOYMENT IN THE BSW

The workforce impacts are clear, particularly in the agricultural sector which comprises around 23% of regional employment.

The implications:

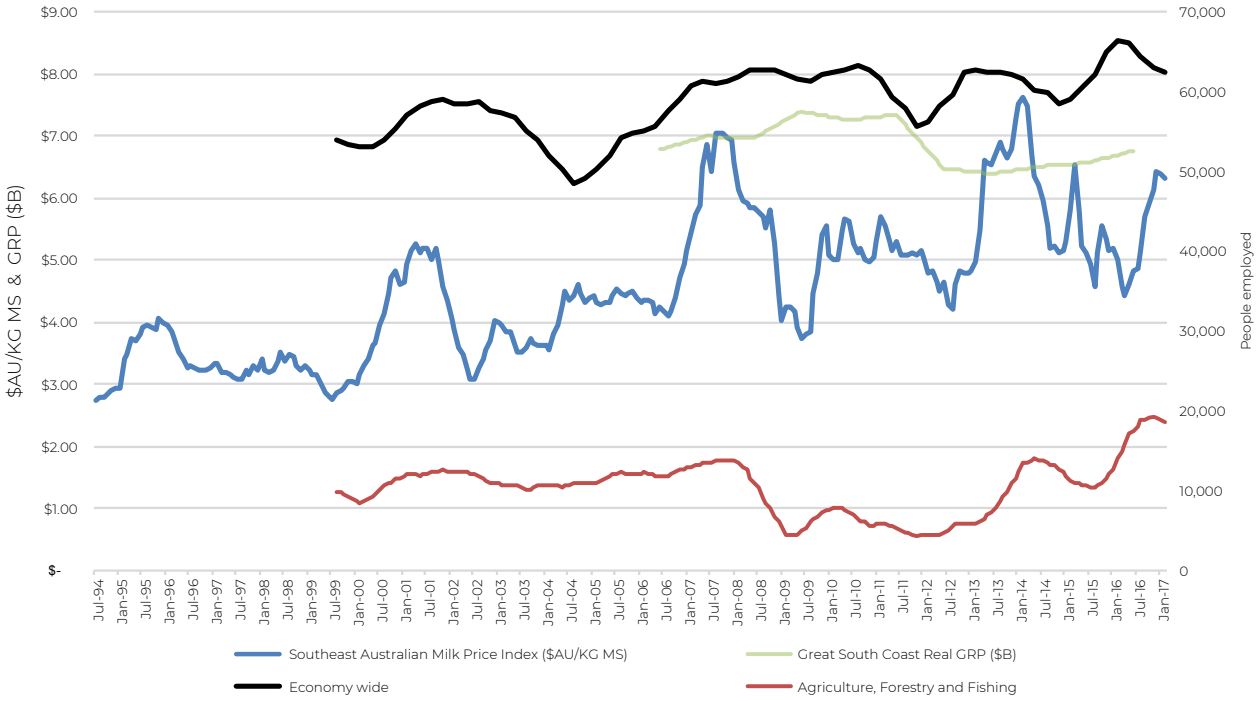
01. The region enjoys a competitive advantage in dairy related industries including production and processing

02. The industry increases capacity to meet expected returns driven by milk prices

03. Employment in the Great South Coast is clearly correlated to milk prices, a global commodity

04. Agriculture is not just a major source of employment, as a sector it is also using other sectors of the economy in its supply chains, and those employed in it are also driving growth in downstream sectors such as retail trade and local services.

FIGURE 2: GRP AND EMPLOYMENT IN AGRICULTURE, FORESTRY AND FISHING



VALUE OF DAIRY INDUSTRY INVESTMENT

Supporting the competitiveness of the dairy industry is vital to its long-term global success. Growth in this lead, exporting sector will flow though to other sectors of the economy through the established local linkages across the value chain. This means that investments made to support the growth and competitiveness of the industry will be high yielding due to the interconnected nature of the industry and local economy. While commodity-based economies present some risks, the value of investment is seen as high yielding where strong and existing value chains are in place, like in the study area.

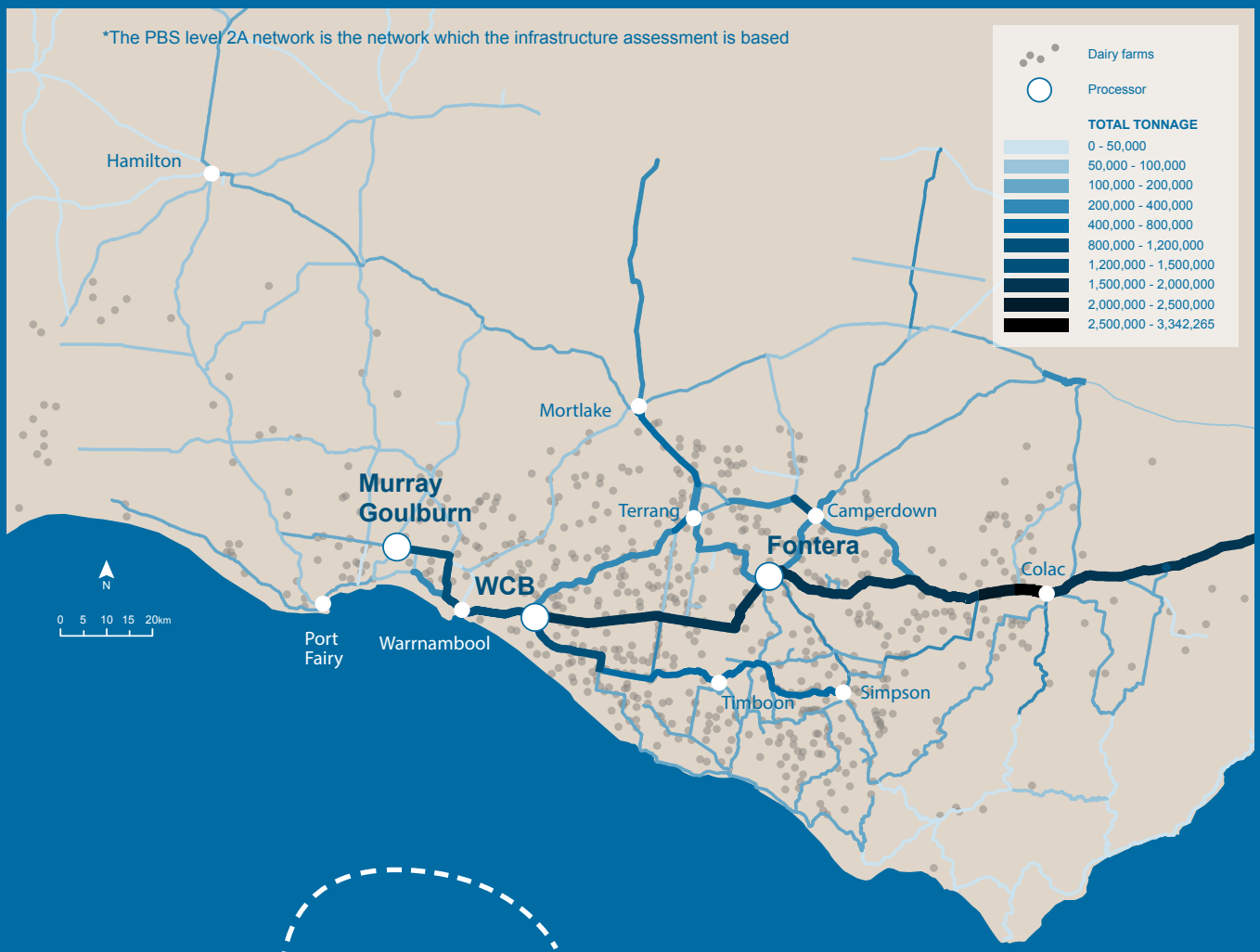
KEY FINDINGS

CURRENT TRANSPORT USAGE BY THE DAIRY INDUSTRY

Figure 3 shows the total tonnage by route across the road network in the study area.

The most substantial product flows are West – East with processing facilities being the major destinations and source of the freight task. Major flows are also notable from the north, being farm inputs such as grain and hay, which are expected to increase with the predicted changes to dairy farming systems. There are major flows to and from depot towns such as Simpson.

FIGURE 3: CURRENT DAILY FREIGHT TASK



Roads in the region are **functioning as a network to support freight movement** across, into and out of the region, with **local roads playing a vital role** in this regard

KEY FINDINGS

THERE IS A STRONG LINK BETWEEN DAIRYING, LAND CAPABILITY AND RAINFALL

Figure 4 shows the level of milk production across the study area and the associated weather patterns.

The link between weather, land capability and milk production is clear. Future weather patterns cannot be predicted, however there is a view that rainfall is likely to contract southwards, requiring an intensification of production south of the Princes Highway. To support increased production on small land allotments, will require more intensive farming systems that rely on increased inputs. These must be transported into the region, predominantly from the north and east.

FIGURE 4: LINK BETWEEN WEATHER, LAND AND PRODUCTION

Improving and further developing the road network across the region is

a response to climate related concerns and is needed to enable appropriate industry responses

KEY FINDINGS

PRODUCTIVITY GROWTH ACROSS THE INDUSTRY

Deregulation (post 2000) has facilitated the movement of resources from farms using a year-round production system, in which calving, and milk production are spread evenly throughout the year, to those using the seasonal production system, in which production periods are more synchronised with pasture availability. This resource reallocation effect boosted industry productivity at a time when on-farm technological progress was slowing. Productivity growth in the Australian dairy industry averaged 1.5% a year between 1978–79 and 2014–15.

Dairy farmers plan their breeding programs in response to pasture growth and milk processor price incentives. The choice of calving pattern determines the seasonality of milk supply and demand for fodder. Common calving patterns are seasonal, year-round or split. Dairy farms using a split calving pattern produced larger milk volumes on average over the 5 years to 2015–16. Split calving results in more cows being milked and greater milk yield per cow than seasonal and year-round calving.

These developments, together with advances in breeding and genetics that have allowed dairy farmers to select cows for a range of traits, such as higher milk yield, longevity and reduced health problems contributed to milk yields per cow increasing at an annual average rate of 1.8% a year from 2000–01 to 2015–16.

Across the study area, it is estimated that 20% of the farmers are using the split calving systems, this is consistent with the Victorian percentage of farmers using split calving systems.

The percentage of farmers using split production is expected to increase to around 40% as a response to increased demand from milk processors.

Split production systems require higher levels of farm inputs which in turn will require increased inbound freight task and road usage.

Split production systems **require higher levels of farm inputs** which in turn will require **increased inbound freight task and road usage**

KEY FINDINGS

ROAD NETWORK ISSUES

Considering that annual haulage related costs associated with dairy production, processing and distribution total around $345 million and account for around 29% of the current industry cost base there are a range of opportunities in the road network component of the supply chain to improve the productivity of the industry.

The localised nature of freight movements and the poor condition of many roads, associated with delivery of inputs and milk collections means there are usually few alternate routes available to freight operators.

PBS Level 2A[1] roads are generally not designed for volume (intensity) or loads (axle weights) of movements created as a result of dairy industry traffic volumes. Higher capacity vehicle configurations would reduce the frequency of dairy related freight movements on the network, particularly in relation to milk collections on local roads and line-haul transfers between facilities.

Temporary speed restrictions imposed by poor road condition affect journey times and traffic efficiency.

The preferred EW & WE freight route of many drivers is via Cobden (C167 & C149) instead of the Princes Highway (A1). It is 6 kilometres shorter and 6 minutes quicker to travel from anywhere West of Warrnambool to anywhere East of Colac via Cobden, than remaining on the Princes Highway, the principal thoroughfare. It is also 8 kilometres shorter and 7 minutes quicker to travel from the Saputo facility at Allansford, the largest in the region, anywhere East of Colac via Cobden, compared to the Princes Highway. Fonterra also have a major processing plant in Cobden.

Interface with local traffic, particularly tourist traffic accessing or leaving the Great Ocean Road, requires continual driver vigilance and awareness.

Such road users are usually unfamiliar with the local road network, often from overseas where drivers are used to driving of the left-hand side of the road, may have limited driving experience, are easily distracted, or, are unused to local conditions and regulations.

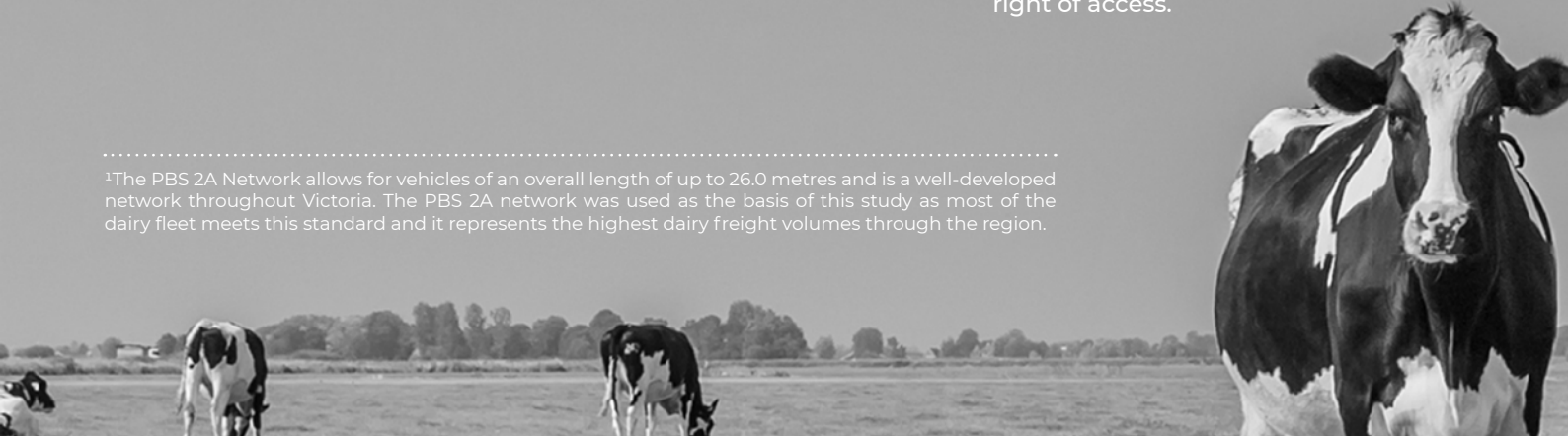
Night operations are used to help ameliorate the level of interaction between tankers and tourists.

The road network North of the C167/C149 is considered to be in better condition than to the South, particularly around Timboon and Simpson, a reflection of the relative rainfall and terrain, with conditions of roads being reported by drivers as hazardous.

Rain, terrain and inundation affects road conditions and access to the South, particularly around the Timboon, Scott's Creek and Kennedy's Creek regions.

While road closure signs are erected at road junctions to prevent traffic crossing affected bridges and culverts, often tanker drivers still need access to farms between the junction and the affected infrastructure, posing questions around movement of signs, local traffic and the right of access.

[1]The PBS 2A Network allows for vehicles of an overall length of up to 26.0 metres and is a well-developed network throughout Victoria. The PBS 2A network was used as the basis of this study as most of the dairy fleet meets this standard and it represents the highest dairy freight volumes through the region.



KEY FINDINGS

OPERATIONAL ISSUES

In addition to network issues, there are also a significant number of operational issues that have been identified:

Inability to utilise full tanker capacity to manage load restrictions on bridges

Increased levels of driver stress due to operating in unsafe or hazardous environments

Loss of efficiency in operations due to reduced safe operating speeds and increased transit times experienced throughout the network

Increased driver fatigue because of the increased concentration and vigilance required to safely navigate the network as well as the physical buffeting experienced as a result if road conditions

General repairs and maintenance costs of fleets are considered high for example:

- Vehicle manufacturer has identified increased number and frequency of suspension components failures
- One milk processor has reported facing increasing costs including a need to replace all springs and suspension components every 12 months, still experiencing breakages in between

Industry is critical that costs associated with ***vehicles braking and then regaining speed*** are often either not appreciated or understood

KEY FINDINGS

INVESTMENT RETURNS EXPAND BEYOND DAIRY

Due to the integrated nature of dairy supply chain, investments that improve the competitiveness and underpin the growth in the local industry will have significant flow on effects across the remainder of the economy.

This study only considers the dairy industry. Other industries are also major users of the South West roads network including forestry, tourism, livestock transport, wind farm construction and aluminium.

The economic and competitiveness outcomes from the proposed investment will also benefit these industries, but these benefits have not been taken into consideration in determining the economic benefits from the recommended investment.

HIGH PRODUCTIVITY FREIGHT VEHICLES (HPFVs)

HPFVs across all truck classes within Australia have performed observably better in safety than their conventional counterparts. Austroads estimated that articulated HPFV trucks in Australia are 60% safer in avoiding major impact crashes whilst both rigid and articulated classes together are delivering 46% safer less major impact accidents than the existing conventional Australian trucking fleet for the same distance travelled.

To deliver significant economic returns operators will need to switch to High Productivity Freight Vehicles (HPFVs) over time.

The innovation in the industry under the PBS 2A scheme has optimised 26m A-doubles being used on the network to provide flexibility and manoeuvrable swept paths that are the equivalent or better than a 19m semi-trailer.

Those parts of the industry that are best able to switch to HPFV's will benefit from investment in the network.

ROAD NETWORK

- The roads function as a network and support a significant freight task
- The inbound fleet is more fragmented than the milk freight fleet, as this element of the freight task is more exposed to local roads, there is likely to be less opportunity to deliver returns based on switching to HPFV
- The milk freight fleet is operated by larger firms, with the capital and procurement programs intending to (if not already) switch to HPFV fleet
- There is a clear epicentre of activity around Cobden and Terang, with significant 'nodes' at processors and other depots across the region
- Significant linkages outside the region which support the region, to the north for various inputs, and west to the Port of Portland and export markets
- Product flows mainly east west, but inbound supply also north south across the region
- The road segments that have the highest tonnage stand to be those with the largest economic return
- Road investment will allow fleet operators to generate savings through productivity, lower costs, improved safety as well as provide the basis for improvements in efficiency through routing
- There is opportunity to provide investment in local roads to improve the efficiency of the network, and therefore the productivity of the industry
- Bridges and culverts are a major constraint to more productive vehicle usage
- Most of the freight task is to the South of the Princes Highway.

PRODUCTION SYSTEMS

- Production systems are changing as farmers move to higher input, higher yield systems
- Currently around 20% of production uses these systems, however this is expected to double over the next 20 to 25 years in response to climate and industry demand for higher levels of milk production increasing the relative freight task associated with farm inputs.

CLIMATE CONSIDERATIONS

- The spatial production pattern is heavily influenced by weather and soil conditions
- Changes in production systems that utilise higher levels of inputs to generate higher yields are a natural response to drier climatic conditions
- There may be a contraction to the south in some of the land currently used for milk production due to climate change and urban encroachment.

INVESTMENT PRINCIPLES

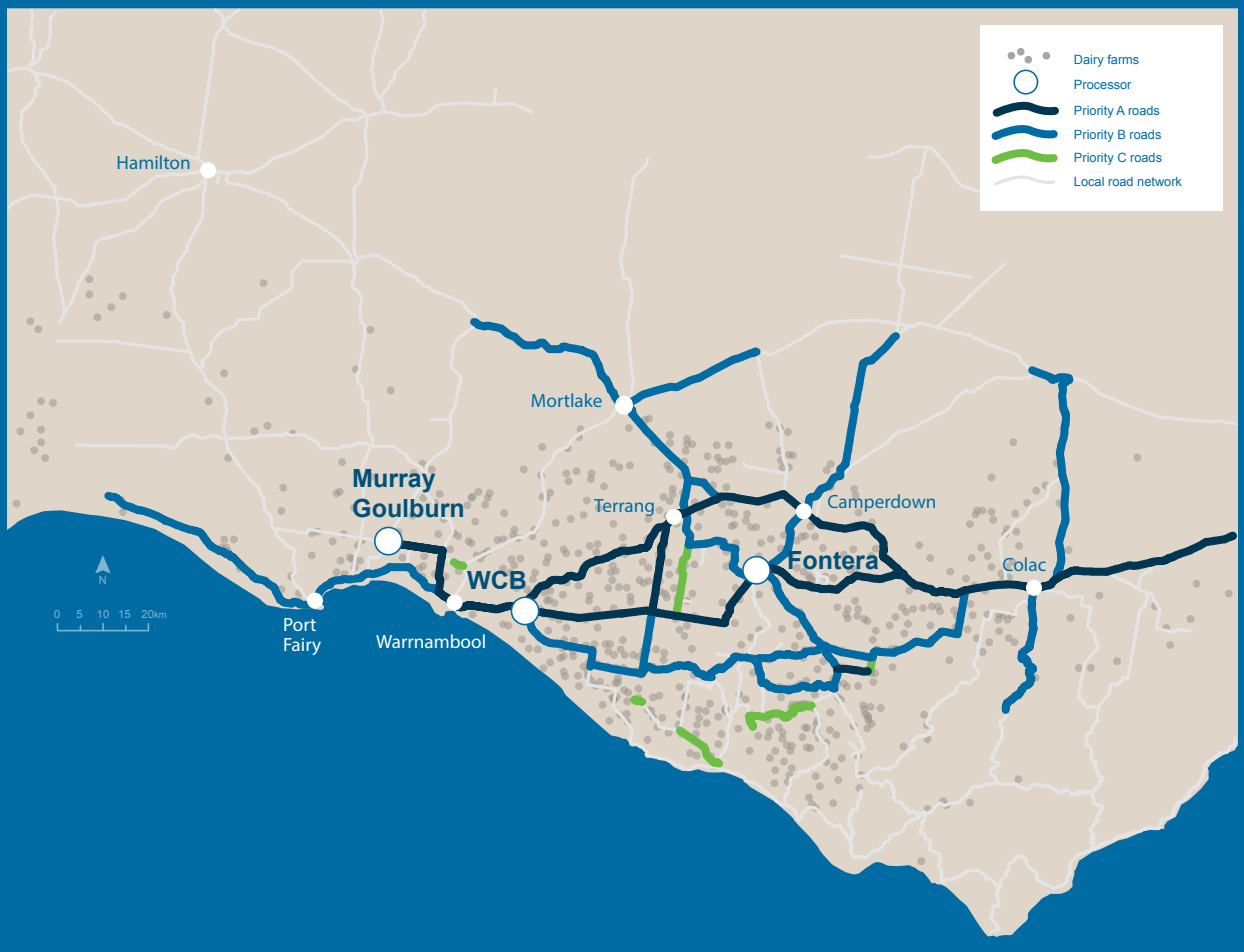
RECOMMENDATIONS

The overarching objective is to increase road-user safety, improve the efficiency of transporting dairy products and inputs between regions and to unlock the maximum economic potential which is constrained by the deteriorating road network.

Within this framework key routes of the network have been assessed, establishing road segments that require resurfacing, rehabilitation and widening. Therefore, the key principles for road network investment are to:

1. Adequately resource and fund the maintenance of the road network to increase the efficiency and safety of the transport system.
2. Maximise the economic benefits in which the dairy industry contributes to south-west Victoria by prioritising investment in the road network, in a staged manner, based on freight volumes where:
   i. Priority A is the principal network which provides access for PBS Level 2A vehicles up to 85.5 tonnes on these routes– Princes Highway, Cobden-Warrnambool Rd, Cobden-Stonyford Road, Ayresford Road, Caramut Road, Mailors Flat –Koroit Road. These routes carry the highest volumes, connect processing centres and provide access to domestic and export markets.
   ii. Priority B is the supporting network which enhances the remainder of existing PBS Level 2A routes for vehicles up to 85.5 tonnes.
   iii. Priority C is the local connector road network for vehicles up to 74.5 tonnes that gives merit to routes feeding into Priority A and B.
3. Improving the network to a standard that the network(s) A, B and C can be gazetted for the dairy industry.

FIGURE 5: RECOMMENDATIONS FOR INVESTMENT



INVESTMENT REQUIREMENTS

OPERATIONAL ISSUES

The Dairy Supply Chain in Victoria's South West Region is predominantly road based and is currently limited by road infrastructure. The multifaceted supply chain relies on farming inputs from the north and trucking movements between depots, farms, processors and out to market.

As the industry continues to grow and farming practices move to more productive approaches, so too do the number of trucks which are required to support these movements.

The growing demand for industry has seen a shift to larger and heavier vehicles to maintain appropriate productivity and efficiency gains. Road condition and cross-section not only limits the ability to allow for heavier vehicles, but so too do bridge assets based on their current load capacity.

Several government schemes are in place to spark innovation in flexible truck designs that meet regulatory constraints on roads. High Performance Fleet Vehicles (HPFVs) across all truck classes within Australia have performed observably better in safety than their conventional counterparts. Austroads estimated that articulated HPFV trucks in Australia are 60% safer in avoiding major impact crashes whilst both rigid and articulated classes together are delivering 46% safer less major impact accidents than the existing conventional Australian trucking fleet for the same distance travelled.

However, there has been a distinct gap in the ability for roads and bridges to accommodate the shift to HPFVs. Strengthening these key assets not only provide productivity gains for industry, but also provide safety benefits for all road users.

Deteriorating road conditions and poor road cross-sections deter efficient movement, as drivers' are forced to make route selection based on road conditions rather than the most efficient route. This limits the overall productivity of industry and creates many missing links in the overall network.

To remain competitive and deliver dairy products to domestic and international markets, the priority A, B, and C roads network has been assessed, establishing road segments (sections) that require resurfacing, rehabilitation and widening. Specific roads and bridges within the network, and the type and nature of the treatment required to meet the directions been identified.

Whilst the economic analysis does not prioritise the investment sequence in the determination of the economic benefits from this project, improving the structural integrity of the bridge network will increase the capability of substantial parts of the road network to a PBS 2A standard and deliver substantial and near-term economic returns.

To deliver on these recommendations, the following treatment type and investment is required.

TABLE 1: RECOMMENDED INVESTMENT

TREATMENT TYPE & DESCRIPTION	PRIORITY A NETWORK ($M)	PRIORITY B NETWORK ($M)	PRIORITY C NETWORK ($M)	TOTAL ($M)
Resurfacing - More substantial work designed to prevent deterioration of infrastructure at minimum cost. Typical examples include resurfacing the pavement to prevent water infiltrating the pavement structure which would damage the pavement, to address some aspects of surface roughness and to improve the texture of the pavement surface.	32.0	45.0	17.2	94.2
Rehabilitation - Significant treatment to improve the structural condition of the pavement and bring the surface profile (roughness and rutting) and texture of the surface back to an acceptable level.	61.4	34.8	-	96.2
Widening - Increasing pavement seal width to accommodate a larger trafficable area which may include the shoulder.	9.6	36.3	5.7	51.6
Bridges – Strengthening or structural replacement.	21.9	53.6	-	75.5
	$124.9	**$169.7**	**$22.9**	**$317.5**

The assumption used in the economic model is to make the proposed $317.5 million investment over 10 years, adjusted for CPI.

IMPACT ON INDUSTRY COMPETITIVENESS

The investment will have a significant and positive impact on the competitiveness of the dairy industry and related supply chains. Given the interconnectedness of the local economy to the dairying industry, these benefits will spill over to the broader economy of the region.

This investment is needed to support expected increases in the freight task from 5.4 million tonnes per annum to over 8 million tonnes per annum by 2045 with expected increases arising from the in-bound freight task, principally due to changes in on-farm production systems which are required to meet increased demand from milk processors as well as from increased production of end products being distributed to end markets or to ports.

The business case for this investment is based on the savings that will accrue to the fleet from

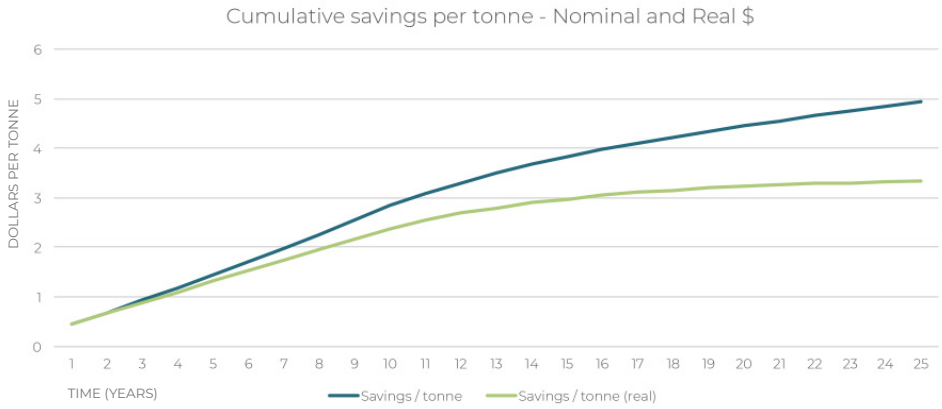
1. Greater utilisation of HPFV's
2. Improved road conditions that will lower operating costs of both the in-bound and out-bound fleet

Assuming the fleet switches over time[2] to HPFV vehicles, then the average carrying capacity per vehicle will increase to 41.4t from the current 34.t, an improvement of 20.4%.

Savings rates increase over time achieving $4.93/t (nominal) and 3.34/t (real) over 25 years (Figure 6).

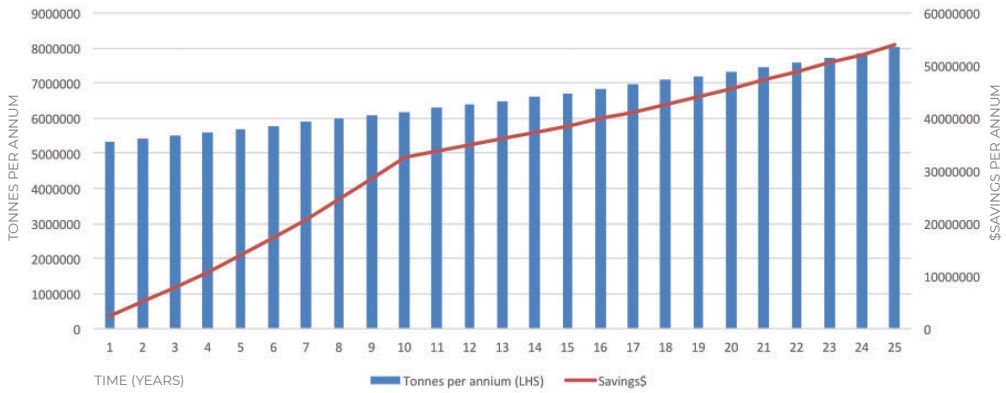
The investment in the road network acts to benefit the entire dairy supply chain through lower transportation and freight costs. Over the supply chain, the proposed investment will result in a reduction in industry related expenditure of over $54 million per annum by 2045.

FIGURE 6: IMPACT OF INVESTMENT ON $/TONNE



The savings rates, based on the haulage costs currently incurred by the industry ($345 million per annum), adjusted for expected growth rates, show that over the life of the project, savings of around 5.6% of haulage costs will be made, which represents around 1.6% of the current industry cost base.

FIGURE 7: ESTIMATED INDUSTRY SAVINGS



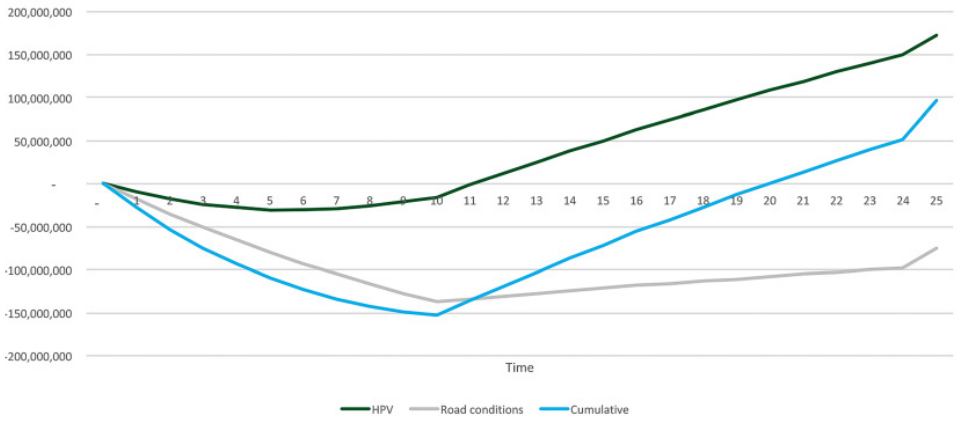
[2]Business case assumes switching occurs consistently at a rate of 10% per annum, so fleets are effectively switched over a 10-year period.

ECONOMIC OUTCOMES

ECONOMIC RETURNS

Over the study area the economy wide economic benefit is expected to include a NPV of $96.6 million and BCR of 2.55.

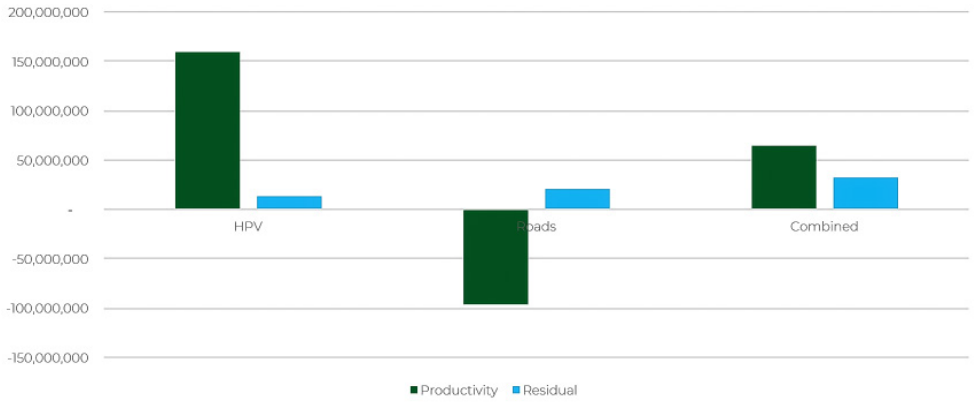
FIGURE 8: NPV RESULTS @ 6.5%[3]



These are positive economic outcomes and support the investment at the recommended levels.

In terms of the components of the NPV, $51 million is due to the recommendations made in relation to priority networks A,B and C and $33 million due to the expected residual value of the road investment.

FIGURE 9: NPV COMPOSITION



The proposed level of investment therefore does not represent an over investment in the roads as ***the productivity benefits are largely responsible for driving economic outcomes,*** not the residual asset values (i.e. the proposed investment produces economic outcomes without inclusion of the residual).

[3]6.5% has been used as the discount rate in the Net Present Value calculation.

ECONOMIC OUTCOMES

SCENARIO ANALYSIS

Scenario Analysis has been completed on the economic outcomes on the following scenarios:

1. Increase road construction costs by 10%
2. Discount rate increases to 7.5%
3. Fleet Switching rate slows to 15 years (effectively by 50%)

TABLE 2: SCENARIO ANALYSIS

	⬆ COST 10%	% TO BASE CASE	⬆ DR TO 7.5%	% TO BASE CASE	⬇ SWITCHING RATE BY 50%	% TO BASE CASE
NPV (m)	74.0	-23%	65.0	-33%	50.1	-48%
NPV productivity (m)	37.8	-41%	39.0	-39%	17.3	-73%
Savings/T (Nominal) ($)	4.94	0%	4.94	0%	4.46	-10%
Savings / T (Real) (2018$)	3.34	0%	3.34	0%	2.95	-12%
BCR	2.32	-9%	2.55	0%	2.31	-9%

In each scenario the economic outcomes remain positive (NPV >1), and productivity outcomes are also positive (NPV productivity >1). Under each scenario the outcomes are not dependent on the residual value of the road to deliver economic outcomes.

A slow-down in the switching rate from 10 to 15 years represents the highest risk to economic outcomes being delivered. There are some mitigating factors in relation to this scenario which reduce its likelihood:

- Life of fleet vehicles is less than 15 years, so there will be opportunities to 'naturally' switch fleet
- Fleet operators are already building HPV vehicles to take advantage of the lower operating costs associated with them
- The estimated build cycle for the roads of 10 years, provides a clear signal to the market allowing time for fleets to be re-calibrated to the new operating conditions.

FAILURE TO INVEST

WHAT ARE THE RISKS OF NOT INVESTING IN THE SOUTH WEST ROAD NETWORK?

The road network is a critical enabling asset that allows milk production and exports to occur at an acceptable cost. If this network is not further developed there are several outcomes that can be expected:

01. SIGNIFICANT OPPORTUNITY COSTS

The economic outcomes identified from this study will not be developed to the extent identified by this study. This represents a major opportunity cost to the region and the State:

- From lost productivity gains specific to the proposed investment with an economic value over 25 years of $51 million
- Potential downstream and local economic growth in the local economy.

02. EMPLOYMENT GROWTH NOT REALISED

The projected growth in milk production from 2.05 billion litres per annum to 2.46 billion litres will be curtailed and with this, the associated employment creation and economic value may not be realised. The projected growth represents a 20% increase in production, which under current industry structures would require around an additional 2,000 FTEs and would create an additional $72 million of economic value annually.

03. LOSS OF COMPETITIVENESS

The worst-case scenario is that, as the road network will become increasingly important as farming practices modify in response to climate considerations, industry loses its competitiveness and moves into a phase of contraction, resulting in employment losses and downstream industry slowdowns.

THE RISKS OF NOT INVESTING
IN THE SOUTH WEST ROAD NETWORK

CONCLUSIONS

The road network supporting Dairying in the South West is in need investment of:

$317.5 million
over 10 years.

Supporting around 24% of the nation's milk production, Dairying in the South West is an industry of national significance generating:

- **$361 million** of economic value added
- Over **7,300 direct employees,** with around 10,300 employed across the value chain
- Exports of over **$257 million per annum**
- Annual taxes paid **$30 million**
- Private sector investment ~ **$30 million per annum**

- Dairying is an internationally competitive industry, with firms and national value chains needing to compete internationally
- The growth in the industry, in terms of milk production, is expected to increase 20% from 2.05B litres to around 2.46B litres. The growth rate of around 1.5% per annum is consistent with national trends.
- To support this rate of growth will require a change in dairy production systems that utilise higher inputs such as feed, grain and fertilizers
- Drier climatic conditions will also drive an increase in the amount of production shift to alternative dairy production systems from around 20% currently to 40% by 2045
- The combination of higher milk production and higher input levels will increase the expected freight task by 47%
- Investment in the dairy industry will support regional population growth by creating approximately 2000 FTES over integrated supply chains in the region
- The BSW economy is commodity based – the recommendations from this project support the global competitiveness of the dairy industry, critical to the region's future economic growth
- Making the recommended $317.5 million investment over 10 years, and assuming switching to HPFV's at the same rate will allow an increase fleet capacity by 20.4% which will underpin significant positive economic outcomes for the industry and the economy more generally including:
  - NPV (@6.5%) of **$96.6 million**
  - Reduction in haulage costs by 2045 of **$4.93/t ($3.34/t in 2018 $)**
  - Reduced haulage expenditures of around **5.6%** or 1.6% of the total industry cost base
  - These impacts will **improve the international competitiveness** of the industry **underpin future growth** of the industry.

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