



Economic and Community Benefits of Sealing the Strzelecki Track

Prepared on behalf of the Outback Communities Authority,
Regional Development Australia Far North and
The Flinders Ranges Council

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Executive Summary

The purpose of this project is to identify and articulate the community and economic benefits of sealing the Strzelecki Track, which is currently a 472-kilometre unsealed regional road that links the towns of Lyndhurst to Innamincka in the north east of South Australia.

The Strzelecki Track is a vital supply link for major oil and gas facilities in the Cooper Basin and is an essential transport corridor for outback communities, tourism and pastoralists. The Strzelecki Track is situated in the Outback Region of South Australia, also referred to as the Outback Communities Authority Region or simply 'the Outback'. The Strzelecki Track provides a link from Adelaide into south-western Queensland via Port Augusta and the towns of Quorn and Hawker (which is just south of the Ikara-Flinders Ranges National Park) in The Flinders Ranges Council area.

Tourism, resource and agriculture / pastoralism have been identified as the three 'key industries' providing the best prospects for Outback South Australia's economic growth and development based on existing comparative and competitive advantages and opportunities to diversify the region's economic activity.

Tourism

The Strzelecki Track, if sealed, would provide a vital piece of enabling infrastructure to support the growth and development of tourism activity in the Outback region and beyond. Tourism is a driver of economic activity in the Outback Region. 'The Outback', together with The Flinders Ranges name is synonymous with one of Australia's most iconic natural landscapes, which underpins the local tourism industry. In the Flinders Ranges area, tourism accounts for the largest share of industry output, jobs and exports.

The Flinders Ranges is usually co-promoted with the Outback, leveraging the proximity and interconnectedness (physical and experiential) of these two areas, and the region is featured on the South Australian Tourism Commission's domestic marketing campaign as part of "the best of South Australia".

The total value-added estimate for The Flinders Ranges Council region is \$52 million. The largest share of the region's industry value-added is attributable to tourism, which at \$9.4 million accounts for 18 per cent of the region's total industry value-added.

In the Outback Communities Authority (OCA) Region the tourism industry is the third-largest employer behind resources and construction sectors, accounting for 6 per cent of jobs located in the Outback. Employment numbers in the region's tourism sector are higher than in the Outback's other service industries such as Public Administration and Safety, Health Care and Social Assistance and Education and Training.

The Strzelecki Track, which extends from Lyndhurst in the south to Innamincka in the north, is largely unsealed and, if upgraded, would assist in improving the linkages between the Flinders Ranges and the Outback touring routes. The Outback has direct access to some major tourist attractions including Lake Eyre and the Flinders Ranges. Touring routes in the northern parts of the region and beyond are well known to the serious four-wheel drive fraternity, but there is a potential to build on this and to widen the area's appeal.

Regional and remote communities such as those in the OCA Region can benefit from the income generated from drive tourists (on stopovers), as those passing through often buy local tourism products and services, and basic travel necessities like fuel, food and other supplies. Drive tourism provides a number of benefits to businesses, including: opportunities for new business start-ups; increased demand for new products and services; opportunities for business collaboration; and additional income and employment.

The indicative analysis shows that when the sealing is complete, and after allowing three years for 'ramp-up', there is a potential for an uplift of \$7.1 million per annum in visitor spending in year 1 as a direct result of sealing the Strzelecki Track. **This is expected to increase to around \$17.4 million per annum after a further 7 years** (i.e. in Year 10 - expressed in present values).

In addition to the estimated economic benefits to the tourism industry, assumptions can be made about the economic uplift to other key sectors – namely the **resource sector**, the **beef cattle industry** and the **road freight industry** – from sealing the Strzelecki Track.

Resource Sector

Resource extraction in the OCA Region is export-oriented, with exports accounting for over 70% of revenue in 2017-18 and these exports are projected to account for a greater proportion of revenue by 2022-23, due to a forecast increase in natural gas exports.

Success factors for the mining industry include the following:

- Resource companies require access to extensive transport facilities, namely ports and rail routes as a large proportion of the industry's products are exported.
- Resource companies that operate close to major domestic and international markets can benefit from lower transport costs and higher profitability.

Productivity enhancement in the resource sector will arise from:

- Reducing travel times and vehicle operating costs (including fuel, emissions and maintenance costs), particularly for heavy vehicles accessing the Santos oil and gas processing facility in Moomba from Port Augusta, as well as existing mining and onshore gas exploration in the Cooper Basin;
- Improving travel time reliability for freight (including gas and cattle), tourists and people in remote communities by reducing the frequency/duration of road closures and providing safer opportunities for overtaking slower moving vehicles;
- Reducing the frequency and severity of crashes associated with overtaking, fatigue and the uneven road surface; and
- Improving access for high productivity freight vehicles.

Beef Cattle Industry

The beef cattle industry makes a major contribution to the economy of the Outback Region and is a significant employer. Success factors for the beef cattle industry, include:

- Proximity to key suppliers - proximity to grain and hay wholesalers helps ensure a continuous supply of feed for beef cattle, especially during periods of extreme weather conditions.
- Proximity to key markets - proximity to key livestock markets reduces the length of time beef cattle are in transit. This reduces animal stress and fatality rates in transport and reduces transport costs for producers.

Hence the efficiency and reliability of transport networks is a key factor in industry productivity.

An issue affecting the cattle industry in Australia is Bluetongue Disease and the presence of this disease can affect access to some international trade markets for cattle. Northern Australia and parts of NSW are affected by declared 'Bluetongue Virus Zones'. With the sealing of the Strzelecki Track there is a potential to move cattle from areas outside the zone in Southwest Queensland and Western NSW to South Australia to feedlots and for processing including possibly live exports. Industry sources have suggested around 15% to 20% of herds in these areas could be diverted to South Australia. This equates to around 100,000 to 130,000 head of cattle.

This has the potential to deliver economic benefits throughout South Australia, not only in the Outback Region, through which greater livestock numbers would be transported, but also in nearby regions such as the Murraylands and Riverland Region to the south-east, where, utilising existing abattoir facilities and direct access to global transport connections, cattle can be processed into higher value products for overseas export.

Road Freight Industry

The Road Freight Transport industry is a critical component in many increasingly complex supply chains, as it provides quick and reliable door-to-door delivery nationwide. The road freight industry services various clients, including the cattle industry.

The Transport and Infrastructure Council (National and Remote Regional Transport Strategy, undated) states that:

- Remote and regional Australia contributes significantly to Australia's economy.
- With its considerable resource and primary industry sectors, remote and regional Australia is responsible for 40% of Australia's Gross Domestic Product (GDP).
- Australia's remote and regional economy is fuelled by the primary production sector (pastoral, horticultural and agriculture, carbon farming, fisheries and aquaculture), tourism, manufacturing and resource sectors.
- Over 60% of the nation's mining and resource platform operates in remote Australia.

It appears axiomatic that high quality roads in remote areas are beneficial to the nation's economy; however, evaluation of such roads tends to focus on a narrow set of issues such as aggregate time savings, ignoring the economic contribution of the payload. This issue is dealt with in the following section.

Estimating Economic Output

While uplift in tourism spending has been estimated above, it is not possible to empirically forecast the uplift in output for the resource sector, beef cattle production and road freight industries, however it is possible to make a reasonable estimate based on the productivity enhancements that the project can deliver. On this basis, it is conservatively estimated that there will be a 5% uplift in output in all three sectors by year ten post sealing.

In total, the uplift in output in the economy is estimated to be \$165 million per annum in year 10 post sealing of the road.

Consequent Economic Impacts

From the REMPLAN Economy model the impacts are summarised in the table below. The key figures are the **value-added of \$87 million per annum** (in year 10) and the employment benefit, which is estimated at a **total of 410 jobs created**.

Impact Summary

Impact Summary	Direct Effect	Industrial Effect	Consumption Effect	Total Effect
Output (\$M)	\$165.160	\$25.028	\$15.121	\$205.308
Employment (Jobs)	293	69	48	410
Wages and Salaries (\$M)	\$22.275	\$5.313	\$2.666	\$30.254
Value-added (\$M)	\$67.982	\$10.060	\$8.977	\$87.018

Community Benefits

The Strzelecki Track provides a vital link for pastoralists, townspeople and indigenous communities to access services to the south that are not available in the area. This includes health, education, community and emergency services.

The isolation of Australia's remote areas can have a negative impact on those people living in these areas. The Strzelecki Track upgrade will ensure that more reliable access is improved for these remote and isolated communities, businesses and individuals.

Cost-Benefit Analysis

The Department of Planning, Transport and Infrastructure has undertaken a preliminary cost-benefit analysis of the proposed Strzelecki Track sealing project from a transport efficiency gain point of view. Key variables tested (for heavy and light vehicles) were:

- Travel time savings.
- Fewer road closures.
- Lower vehicle operating costs.
- Fewer crashes.

The net present value of the option was assessed at \$1.3 billion, with a benefit-cost ratio (BCR) of 4.9:1.

Implications of Wider Economic Benefits

It is shown above that the project has potential to deliver a 'value add' to the economy in the order of \$87 million in year 10 after a ramp-up period. If this is projected out over 40 years and discounted at a rate of 5% per annum the present value of the benefit stream is \$1.4 billion. Given the nature of the assumptions that have had to be made the tolerance should be around +/- 30%. Hence the range is between \$1.0 billion and \$1.8 billion.

Given that the Department of Planning, Transport and Infrastructure estimated the present value of direct transport benefits to be \$1.3 billion, **consideration of wider economic benefits has a potential to double this figure to between \$2.3 billion and \$3.1 billion.**

1. Introduction

1.1 Project Background and Purpose

The purpose of this project is to identify and articulate the community and economic benefits of sealing the Strzelecki Track, which is currently a 472-kilometre largely unsealed regional road that links the towns of Lyndhurst to Innamincka in the north east of South Australia.

The Strzelecki Track is a vital supply link for major oil and gas facilities in the Cooper Basin and is an essential transport corridor for outback communities, tourism and pastoralists. The Strzelecki Track is situated in the Outback Region of South Australia, also referred to as the Outback Communities Authority Region or simply 'the Outback'. The Strzelecki Track provides a link from Adelaide into south-western Queensland via Port Augusta and the towns of Quorn and Hawker (which is just south of the Ikara-Flinders Ranges National Park) in The Flinders Ranges Council area.

Sealing of the Strzelecki Track has been identified within the Economic Growth and Investment Strategies for the Roxby Downs Region, The Flinders Ranges Council Region and the Outback Communities Authority Region as a priority across all three sub-regions. Each emphasises the case that transport links - which are essential to ongoing participation in the national and global economies - also provide the conduits for the outward movement of activity from regional areas. Distance from ports, by road and rail, inevitably increases the costs of goods and services, placing remote communities like the Outback at a comparative disadvantage.

The Economic Growth and Investment Strategies contend that, if upgraded, the Strzelecki Track would present opportunities not only for tourism in the Outback, but also for improved intra-regional links to support the resource sector and related industrial activity throughout the Far North. The Strzelecki Track has also been identified as a top priority in the oneOutback Prospectus.

The National Land Transport Network (roads and rail) in the Outback Communities Authority (OCA) Region provides critical transport links across the nation and connects South Australia with interstate markets and major export ports. The capacity of the region to physically connect with national and international markets however, is limited by generally less than ideal road conditions, with much of the region's network unsealed. For example, there is no sealed road connection from the OCA Region directly into Queensland, limiting trade and travel unless via central New South Wales.

The proposed Strzelecki Track upgrade and sealing project is a key recommendation in the Roadmap for Unconventional Gas Projects in South Australia, released in 2012. The Strzelecki Track upgrade is also identified as a priority project in South Australia's Integrated Transport and Land Use Plan, released in July 2015. The project will involve the upgrade and sealing of the Strzelecki Track and the Adventure Way road link from Innamincka to the Queensland border.

In February 2014, the South Australian Government submitted to Infrastructure Australia for assessment, a business case for the Strzelecki Track upgrade. On 29 September 2015, Infrastructure Australia announced the Strzelecki Track upgrade and sealing project achieved an "early stage" rating on its Infrastructure Priority List. On 17 February 2016, the Australian 15-Year Infrastructure Plan and Infrastructure Priority List was released. The Strzelecki Track sealing and mobile coverage project was identified as a priority initiative.

The South Australian Government continues to work with Infrastructure Australia to advance the project, which has potential for significant private sector involvement in both capital and operating expenditures.

1.2 Project Scope

The purpose of the study is to identify and articulate the community and economic benefits of sealing the Strzelecki Track. Previous work has been undertaken on this project with a positive cost-benefit ratio, however, it focussed on the minerals and resources sector.

This project seeks to broaden the scope of work already undertaken to include aspects including tourism, agriculture and other opportunities for economic development. The findings of this report adds further merit to the case for sealing the Strzelecki Track and supports opportunities in seeking support for the project.

This project commences with the assumption that the Strzelecki Track is sealed and seeks to document increased economic benefits across States, South Australia, the Far North Region, and its communities and businesses have experienced as a direct result.

The research, consultation and analysis draws on what information is available to inform assumptions about the **potential uplift** to economic activity in key 'driver' sectors of the regional economy should the Strzelecki Track be sealed. These key industries include: tourism; agriculture / pastoralism (primarily the movement of livestock – beef cattle); and resource processing (primarily oil and gas at Moomba).

Stakeholder consultation provided important input to the study process. Organisations and individuals consulted included: The Flinders Ranges Council; RDA Far North, The Outback Communities Authority; RDA Murraylands and Riverlands; the State Member for Stuart; Kalari Pty Ltd; Mogas Group; Reliable Petroleum; Leigh Creek Energy; Bowmans Rail; Santos; Livestock SA; Hancock Agriculture; South Australian Road Transport Association; Department Planning, Transport and Infrastructure; South Australian Tourism Commission; Outback Loop; Innamincka Hotel; and Lyndhurst Roadhouse.

Tourism, mining and agriculture / pastoralism have been identified as the three 'key industries' providing the best prospects for Outback South Australia's economic growth and development based on existing comparative and competitive advantages and opportunities to diversify the region's economic activity.

The three industries were the focus of the Outback Communities Authority Region Economic Growth & Investment Strategy (EGIS), which was prepared by SC Lennon & Associates for Regional Development Australia Far North (RDAFN) and the Outback Communities Authority (OCA) in September 2016.

A focus of the EGIS is to address the determinants and enablers of regional economic development. These include: Regional Comparative Advantage and Business Competitiveness; Human Capital (Skills); Strategic Infrastructure; Access to Local, National and International Markets; and Effective Regional Partnerships.

As far as the potential benefits to be derived from sealing the Strzelecki Track are concerned, each key industry is addressed in turn, using information acquired through or referred to in meetings with the client (RDAFN) and other stakeholders, starting with tourism.

2. Benefits to Outback Tourism

2.1 South Australia's and Australia's Tourism Sector Outlook

Australia's tourism industry has exhibited strong revenue growth over the past five years, due primarily to a healthy increase in international visitor arrivals as the Australian dollar has depreciated. Tourism industry revenue is expected to rise at an annualised 3.4% over the five years through 2017-18, to reach \$129.5 billion. Growth has largely been driven by a surge in international tourism, particularly from China, India and Malaysia.

Domestic activity has also been robust over the past five years. Domestic tourism accounts for around three-quarters of industry activity (IBISWorld, October 2017). According to Tourism Research Australia (TRA), domestic visitor nights and expenditure have risen over the past five years as it has become relatively cheaper for Australian residents to travel in Australia. This has boosted demand for the industry's services from this market. Transport providers, retailers, accommodation providers, hospitality firms and other tourism players have all benefited from increased activity and spending from both domestic and international visitors.

According to IBISWorld (October 2017), over the five years through 2022-23, Australia's tourism industry revenue is expected to increase by an annualised 3.0% to total \$150.5 billion. The industry in Australia is expected to further enhance its online capabilities as consumers increasingly use the internet to research and organise trips.

According to the South Australian Tourism Commission (SATC), South Australia's visitor economy is at an all-time high, with a value of \$5.9 billion, an increase of 11.4% or \$608 million since June 2015. It states that the latest data released by TRA shows domestic tourism expenditure in South Australia has grown by \$439 million to reach \$5.0 billion, while international expenditure has increased by \$170 million to reach \$944 million since June 2015.

International and domestic visits have also increased. In June 2016, South Australia received 422,000 international visits (up 9.5%) and 6.1 million domestic visits (up 7.7%). Despite rising demand from international visitors, South Australia's tourism industry relies heavily on domestic visitors, with Australian households and businesses accounting for more than 70% of industry revenue.

2.2 Tourism in The Flinders Ranges & Outback Region

The Outback Communities Authority Region Economic Growth & Investment Strategy (September 2016) states that the region's tourism industry has a solid base and potential for growth as national and international market trends support opportunities to capitalise on demand for nature-based, historical, cultural and recreational experiences. This includes growing demand for more high-end, high-yield products and services such as eco-tourism experiences.

Tourism employs local residents across a diversity of sectors including accommodation and food services, arts and recreation services, retail trade and transport. Importantly, the tourism industry displays strong backward linkages into the local economy. One of five principles for supporting economic growth and investment in the OCA Region is to "promote a partnership approach to tourism development, working in collaboration with other tiers of government and the industry to enhance regional branding, marketing, product development, visitor servicing and support infrastructure".

The Strzelecki Track, if sealed, would provide a vital piece of enabling infrastructure to support the growth and development of tourism activity in the Outback region and beyond. One of four 'action areas' presented in the OCA Region Economic Growth & Investment Strategy is to "Support the Development of the Outback Region's Visitor Economy". One of twelve individual actions in this action area is to "progress investigation of a business case to upgrade / seal the Strzelecki Track to serve the growing drive tourism market".

Tourism has also been identified as a priority industry in the Flinders Ranges Economic Growth & Investment Strategy (December 2016), which was prepared by SC Lennon & Associates on behalf of RDAFN and The Flinders Ranges Council.

As documented in the Economic Growth & Investment Strategy, tourism is The Flinders Ranges Council region's principal economic driver, accounting for the largest share of industry output, jobs and exports. The Flinders Ranges name is synonymous with one of Australia's most iconic natural landscapes which underpins the local tourism industry.

The foundation of the Flinders Ranges' natural comparative advantage in tourism is the scenic appeal of the Flinders Ranges itself, which is the largest mountain range in South Australia and includes a number of protected areas including the Ikara-Flinders Ranges National Park, the Mount Remarkable National Park in the southern part of the region, the Arkaroola Protection Area at the northern end of the ranges, The Dutchmans Stern Conservation Park, west of Quorn and the Mount Brown Conservation Park, south of Quorn.

The product offering in the Flinders Ranges is diverse. In addition to its distinct natural (often marketed as 'ancient') landscapes, there is a richness of European and Aboriginal history and cultural heritage entwined in the regional tourism experience. The diversity of experiences includes walking and cycle trails, colonial history, pioneer ruins, bush foods, Aboriginal cultural tours, museums, biking, off-road driving, a historic railway (Pichi Richi Railway), scenic flights, birdwatching, mine tours, camel tours, camping and caravanning.

For film buffs, The Flinders Ranges Council region is well-known as a location of choice for many high-profile productions which have been filmed in Quorn and the surrounding region over the years. This in itself is an attraction for visitors wishing to see the places where iconic films like Breaker Morant, Gallipoli, The Shiralee, Robbery Under Arms, The Water Diviner and others were shot.

The Flinders Ranges has a high profile within the industry in Australia. Identified by the Tourism & Transport Forum (TTF) as one of Australia's 15 'National Landscape Areas' which recognises its geological significance, the Flinders Ranges is widely known and highly regarded as a major destination of choice.

According to TTF (June 2017), of Australia's 15 National Landscape Areas, the Flinders Ranges has experienced one of the fastest rates of growth in visitor numbers, of 8.8% per annum between 2012 and 2016. This places the Flinders Ranges' growth in visitor numbers behind only Kangaroo Island (13.7% per annum), the Australian Alps (12.7%) and Australia's Green Cauldron (11.7%).

Tourism's contribution to the gross regional product (GRP) of the Flinders Ranges Natural Landscape Area has increased at an average annual rate of 9.2% between 2012 and 2016 compared to the national average overall growth rate of 2.4% over the same period (Tourism & Transport Forum, June 2017).

The Flinders Ranges is regarded as a 'must see' destination for all travellers, whether they are from South Australia, interstate or from overseas. However, like Australia's other Natural

Landscape Areas, the Flinders Ranges relies on domestic visitors more than it does international visitors.

According to TTF in 2016, domestic overnight visitors accounted for 53% of all visitors to the Flinders Ranges followed by domestic day trip visitors (44%) and international visitors (2.7%). This is consistent with Tourism Research Australia (TRA) data and the South Australian Tourism Commission's data as presented in the Flinders Ranges & Outback Regional Profile, December 2014-2016 (2017).

The Flinders Ranges is usually co-promoted with the Outback, leveraging the proximity and interconnectedness (physical and experiential) of these two regions, and the region is featured on the South Australian Tourism Commission's domestic marketing campaign as part of "the best of South Australia".

2.3 Tourism's Contribution to The Flinders Ranges & Outback Economy

The significance of tourism in the Flinders Ranges Region is demonstrated by the contribution the industry makes to industry output, value-added, employment and inter-regional exports as modelled in REMPLAN.

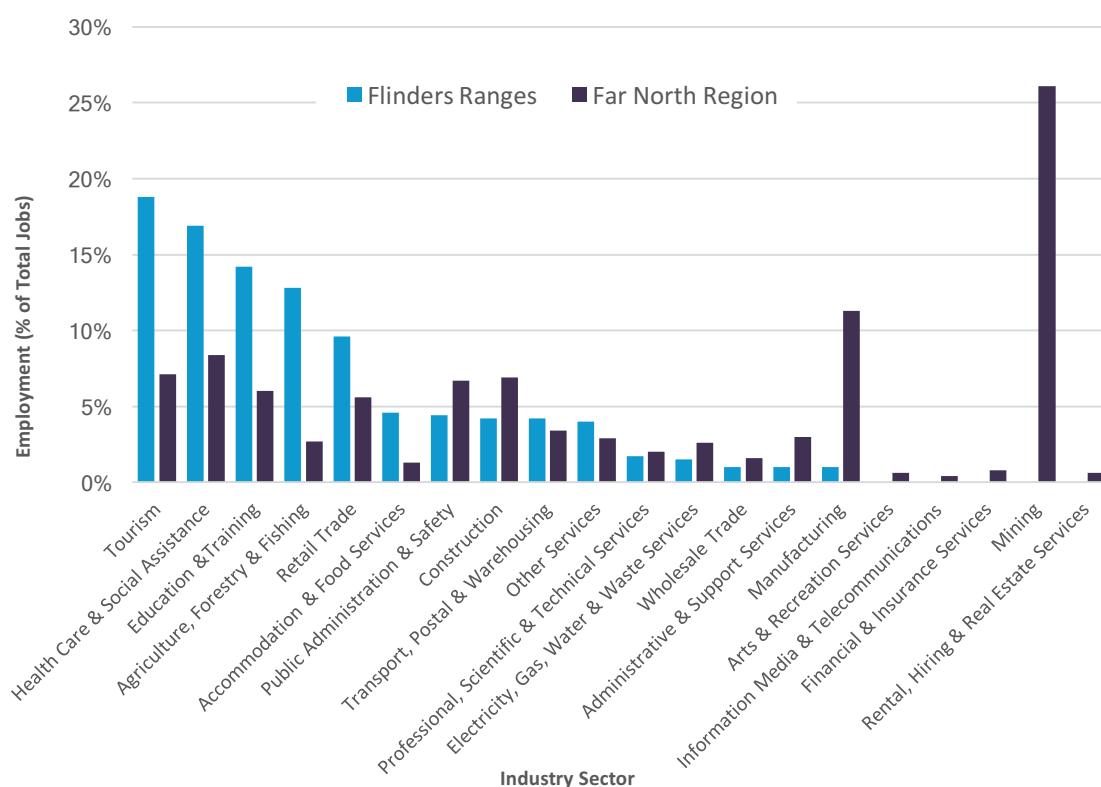
To capture the true size and value of tourism, REMPLAN quantifies the tourism sector as a stand-alone industry. The tourism industry is an amalgam of activities across various sectors including Retail Trade, Accommodation & Food Services, Arts and Recreational Services and Transport, Postal and Warehousing. REMPLAN's Tourism Analysis Module estimates the total number of jobs and the value of tourism for the local economy and incorporates a 'Tourism Sector' into the output and employment data.

According to REMPLAN, the total value of the region's tourism output is estimated at \$22.1 million, which is 21% of the value of The Flinders Ranges Council region's total industry output.

As illustrated below, tourism (visitor expenditure) supports 21% of local jobs (compared to just 8 per cent of jobs located in the wider Far North Region), making The Flinders Ranges Council region one of a very small number of local government areas in Australia where tourism is the number one contributor to employment.

In The Flinders Ranges Council region, 85% of local tourism employment is in Accommodation & Food Services, then Transport (7%), Retail (5%) and Administrative & Support Services (2%). Of all Accommodation & Food Services jobs, 63% are related to accommodation, reflecting a stronger focus on serving visitors, relative to the serving local residents.

Figure 1 - Employment by Industry, Flinders Ranges and Far North Region, 2016



Source: REMPLAN, August 2017

The REMPLAN economic model also calculates industry value-added, which is the value that is added by industry sectors in The Flinders Ranges Council region to intermediate inputs. Value-added is considered to be a better reflection of the strength or otherwise of a local or regional economy because it refers to only the value of output generated in the region less the cost of imported inputs such as the purchase of machinery and equipment and other non-labour inputs used in the production process.

The total value-added estimate for The Flinders Ranges Council region is \$52 million. The largest share of the region's industry value-added is attributable to tourism, which at \$9.4 million accounts for 18 per cent of the region's total industry value-added.

Beyond the Flinders Ranges, tourism is a significant contributor to economic activity in the wider Outback Communities Authority (OCA) Region. The Outback's tourism industry is the region's third-largest employer behind Mining and Construction, accounting for 6 per cent of jobs located in the Outback. Employment numbers in the region's tourism sector are higher than in the Outback's other service industries such as Public Administration and Safety, Health Care and Social Assistance and Education and Training.

2.4 The Case for Addressing Tourism Transport Infrastructure Shortfalls

Consistent with the figures presented by TTF referred to earlier, the South Australian Tourism Commission (2015) data shows that 93 per cent of visitors to the Flinders Ranges & Outback are domestic visitors; almost half (47 per cent) of domestic visitor nights in the Flinders Ranges & Outback are spent either with friends or relatives or in hotels and similar accommodation. Data presented in REMPLAN and sourced from Tourism Research Australia shows that the average length of stay by visitors to the OCA Region is 5.0 nights.

Caravan and camping is popular with 36 per cent of visitors to the Flinders Ranges & Outback preferring this type of accommodation. Around one-third of domestic visitors to the region are from interstate, predominantly Victoria and New South Wales, suggesting an opportunity to grow the market for visitors from elsewhere in Australia, notably Queensland.

The Flinders Ranges Council region enjoys relatively good access for visitors, particularly for self-drive tourists. Self-drive tourists comprise of domestic family holidaymakers who stick to main sealed highways. 'Grey nomads' (older couple with no children living at home) and 4WD enthusiasts are more adventurous and will travel on unsealed roads and trails.

Domestic and international backpackers (couples or small groups), despite their reputation as tourists on tight budgets actually spend more, travel further and stay longer than other travellers while in Australia. As part of the Explorer's Way Touring Route, the Flinders Ranges & Outback region is easily accessed by conventional vehicle from Adelaide and by four-wheel drive via numerous Outback tracks.

On the other hand, many roads in the Flinders Ranges & Outback are unsealed and can become impassable through flooding and heavy rainfall. This issue is compounded by the time it can take to re-open these same roads after rain events.

The Strzelecki Track, which extends from Lyndhurst in the south to Innamincka in the north, is largely unsealed and, if upgraded, would assist in improving the linkages between the Flinders Ranges and the Outback touring routes. The Strzelecki Track upgrade was identified as a priority project in South Australia's Integrated Transport and Land Use Plan, released in July 2015. The project will involve the upgrade and sealing of the Strzelecki Track and the Adventure Way road link from Innamincka to the Queensland border.

The Flinders Ranges Economic Growth & Investment Strategy includes 31 individual actions across four action areas, 20 of which are focussed on supporting the development of the tourism industry. Two of the actions designed to support tourism in the Flinders Ranges Council area are focussed on addressing the region's road transport infrastructure shortfalls:

- Action 1.1: Continue to review, assess and prioritise The Flinders Ranges Council region's strategic regional road upgrade needs using standard assessment criteria; agree on priorities and advocate needs to State and Federal Governments; and
- Action 1.2: Continue to collaborate with relevant State and Federal Government departments and agencies to progress the Strzelecki Track upgrade and sealing project proposal.

These actions are identified as the top two priorities out of a total of 31 individual actions contained in the strategy.

2.5 Prospects for Drive Tourism in the Outback

The tourism industry's outlook is positive, and outback tourism is growing rapidly with its natural landscape the major drawcard. International visitors are seeking new experiences and the domestic drive market is growing each year. The 'grey nomad' phenomenon is generating new income opportunities for many regions throughout Australia including the Flinders Ranges & Outback.

The Outback has direct access to some major tourist attractions including Lake Eyre and the Flinders Ranges. Touring routes in the northern parts of the region and beyond are well known to the serious four-wheel drive fraternity, but there is a potential to build on this and to widen the area's appeal. Research by the South Australian Tourism Commission has shown visitors generally enjoy their time in the Outback, with 75% finding travelling to more than one place in the region appealing. Case studies indicate that tourists have a preference for loop roads, rather than out and back routes. New and improved routes may encourage increased and repeat visitation.

Regional and remote communities such as those in the OCA Region can benefit from the income generated from drive tourists (on stopovers), as those passing through often buy local tourism products and services, and basic travel necessities like fuel, food and other supplies. Drive tourism provides a number of benefits to businesses, including: opportunities for new business start-ups; increased demand for new products and services; opportunities for business collaboration; and additional income and employment.

Measures of success for Outback South Australia's drive tourism market include the number of tourists embarking on self-drive journeys, the length of their journeys, the time they spend in particular places and the amount of money they spend. This market is expected to experience significant growth due to Australia's ageing population and a corresponding increase in retirees who travel around Australia.

Regions elsewhere in Australia are taking full advantage of the growth in demand for drive tourism experiences by promoting touring routes and providing the facilities and services that visitors seek. The Savannah Way in the north is a case in point. Many opportunities are created to grow business enterprises in hospitality and unique offerings such as Indigenous art.

2.6 Case Studies

There are not many examples of case studies of road sealing projects which provide researched and analysed data on the impacts of sealing the road after the completion of the project in question. In most cases, anecdotal information is used to demonstrate the impacts / benefits of a road sealing project. A review of case studies on the impacts of sealing major roads or highways that serve as drive tourism routes in other parts of Australia reveals the following.

[Tolmie-Whitfield Road in Mansfield, Victoria](#)

In a 2006 report prepared for Mansfield Shire Council by Essential Economics, which provided a business case for sealing the Jamieson-Eildon Road, a case study of the sealing of the Tolmie-Whitfield Road in Mansfield Shire was presented.

While no post-road sealing traffic counts were available, the report noted that anecdotal evidence suggested that sealing the road has increased traffic and tourism to Tolmie, with passing traffic estimated to have increased by 40% since the sealing of the final section of road. It was reported that the sealing of the road has also enabled the marketing of the Ned Kelly

Tourism Route, which includes Powers Lookout near Tolmie, and many family and school groups have since visited Powers Lookout and Tolmie as part of their trip along the Ned Kelly route.

[Grampians Way, Victoria](#)

In a 2012 scoping study of the proposed Grampians Way Ring Road around the Grampians National Park, which was prepared for the Grampians Tourism Board by Urban Enterprises, a key objective was to mitigate the impact of future road closures, facilitating visitor dispersal and developing the touring route as a tourism product in its own right.

The report stated that following severe flooding resulted in the closure of the major touring routes through the Grampians National Park. The impact of these closures was significant resulting in visitation in the year to June 2011 being 14% less than the year to June 2010.

[Mansfield-Wangaratta Link, Victoria](#)

According to a review of case studies by Urban Enterprises (2012), the sealing and upgrade of the 31km Mansfield-Wangaratta route has supported tourism development opportunities within the King Valley region. The road development has supported an average of 40% increase in road usage between 2001 and 2011, with some sections of the touring route experiencing a double in traffic over the same period. The touring route has sustained the development of the King Valley as a premier Victorian food and wine destination and ancillary development in food retail and accommodation.

[Bogong High Plains Road, Falls Creek, Victoria](#)

According to a review of case studies by Urban Enterprises (2012), the sealing of the 31 km Bogong High Plains Rd in April 2009 has created a unique Alpine loop for car tourers and motorcyclists, as well as providing an alternative route to Falls Creek via Omeo. It is reported that traffic volumes along the route have increased by 12% between 2008 and 2011. Furthermore, Alpine Shire estimates that as a result of the road development, over 5% of visitors to the region will extend their stay by an additional night.

2.7 Tourism-related Benefits of Sealing the Strzelecki Track

The preceding case studies help inform benchmarks of the potential economic and tourism impacts of sealing the Strzelecki Track. If upgraded to a sealed road, the Strzelecki Track would present opportunities to grow the region's drive tourism industry.

Anecdotal evidence and case studies from elsewhere in Australia suggests that if an outback / regional road is sealed, there is at least a 15% to 40% uplift in traffic movements along that road. Closer to home, according to local operators and officers from the South Australian Tourism Commission, sealing of the 61km Wilpena to Blinman Road in the Flinders Ranges in 2010 saw caravan and other vehicle traffic to Blinman increase by 25% to 30%.

Anecdotal evidence collected through consultation with stakeholders, together with anecdotal information and quantified impacts from case studies of completed projects elsewhere in Australia suggest that sealing the Strzelecki Track can be expected to generate a range of tourism-related economic and community benefits. These include:

- An improved touring route providing more options year-round for a diversity of visitors beyond the traditional 4WD fraternity by enabling hire cars, caravans and buses, which typically are not equipped to travel along unsealed roads, to explore more of the Outback.
- An improved driving experience and road safety for locals and visitors and becoming a tourism experience in itself.
- Improved amenity for communities and businesses in the northern part of the Outback.
- An improved Outback Loop experience. Case studies indicate that tourists have a preference for loop roads, rather than out and back routes. New and improved routes may encourage increased and repeat visitation.
- Improved connections into Queensland's drive tourism market, with the potential for increased traffic flows both north and south between Queensland and South Australia.
- Improved access to more options, resulting in an increase in visitation, length of stay and visitor spending along the Strzelecki Track and throughout the Far North Region.
- Increased viability of businesses in stopovers located along the Strzelecki Track, including at Lyndhurst and Innamincka; it can be expected that new opportunities for local economic development will emerge in retail, interpretive and cultural attractions along the Strzelecki Track.
- Development of additional tourism products and tourism-related infrastructure (e.g. visitor accommodation) as a result of more passing trade.
- Creation of short-term construction jobs and on-going tourism-related employment.
- An economic boost for the stopovers and townships along the Strzelecki Track, directly linked to the upgraded road, and multiplier economic benefits (employment and economic output) for the wider region.

2.8 Expected Uplift in Tourism Traffic and Length of Stay in The Outback

In order to assess the expected on-going impacts (benefits) sealing the Strzelecki Track will have on the region's tourism industry and wider economy, it is necessary to compare the project (sealing the Strzelecki Track) with the base case (the current situation, i.e. an unsealed road).

The anticipated tourism benefits of sealing the Strzelecki Track will be underpinned by a resulting increase in traffic movements and an increased capacity for visitors to stop, stay longer in the region and spend more money on local tourism products and experiences.

Assumptions about the expected increase in traffic volumes along a post-sealed Strzelecki Track can be applied to information on the average number of visitors (tourists) driving the Track each year. Assumptions made by SC Lennon & Associates using data provided by the South Australian Government Department of Planning, Transport and Infrastructure (DPTI) suggests

current light vehicle traffic movements along the unsealed Strzelecki Track total approximately 120 vehicles per day, or around 43,000 vehicles per annum.

Not all of these vehicle movements would be drive tourists. For the purpose of this analysis, it is assumed that around 50% of light vehicles currently using the Strzelecki Track (the base case) are tourist vehicles, or approximately 21,600 vehicles.

The case studies indicate traffic flows can increase by an amount anywhere between 15% to 50% over an extended period of time (say 5 - 10 years) following the sealing of a major tourist road. Data sourced from DPTI estimates vehicular traffic on the currently-unsealed Strzelecki Track will increase at a natural rate of growth of 3.3% per annum over the next 30 years.

Informed by case studies, it is assumed that vehicular traffic on the Strzelecki Track will increase over and above this forecast rate of growth by an additional 2.7% per annum following completion of works to seal the Strzelecki Track, for a total average annual rate of growth in tourism traffic of 6 per cent. It is assumed that, following the sealing of the road, benefits start to accrue after approximately 3 years of 'ramp-up' in traffic volumes.

REMPPLAN, which draws on Tourist Expenditure Profile data sourced from Tourism Research Australia (TRA), Regional Tourism Profile 2015; Flinders Ranges and Outback, shows the average length of stay for both domestic overnight and international visitors to the Outback is 5.0 nights.

According to the South Australian Tourism Commission's Flinders Ranges & Outback Regional Profile December 2014-2016 (2017), 94% of visitors to the region are domestic tourists with only 6% being international visitors. Data sourced from Tourism Research Australia's local government profiles (2016) shows the average spend per night by visitors to the region is \$132 per night.

If, by sealing the Strzelecki Track and improving access to and between tourist attractions in the region (complemented by the design and implementation of a successful tourism destination development strategy), it is conservatively assumed the current visitation levels to the Outback could be increased by one extra night's stay, to an average of 6.0 nights with the average spend per night held constant at \$132.

2.9 Additional Visitor Expenditure Benefits to The Outback Region

In estimating the economic benefits of sealing the Strzelecki Track, SC Lennon & Associates has adopted the above assumptions to determine the expected uplift in tourism traffic numbers, associated expenditure impacts and benefits to the tourism industry. All values are entered in present day dollars (i.e. excluding inflation) and a net present value has been calculated over 40 years at a 5% discount rate.

The indicative analysis shows that when the sealing is complete, and after allowing three years for 'ramp-up', there is a potential for an uplift of \$7.1 million per annum in visitor spending in year 1 as a direct result of sealing the Strzelecki Track. This is expected to increase to around \$17.4 million per annum after a further 7 years (i.e. in Year 10 - expressed in present values).

3. Benefits to the Resource Sector

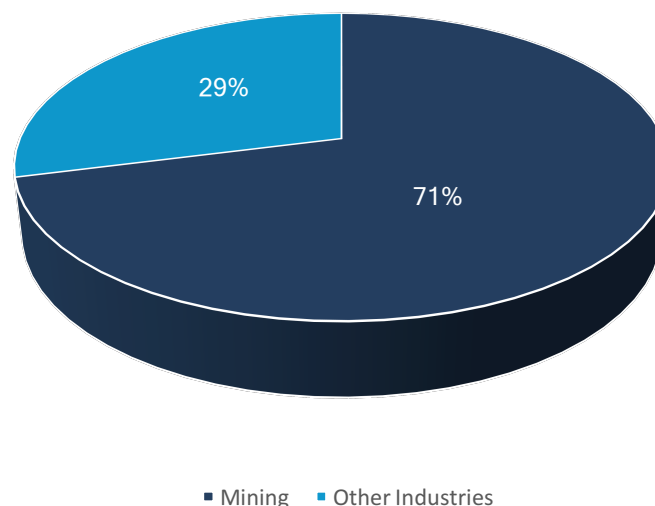
3.1 Resource Sector Overview

According to IBISWorld (November 2017) Australia has a large supply of mineral, hydrocarbon and non-mineral reserves, which the resource sector extracts, processes and sells. These reserves are often high quality and close to the earth's surface, enabling Australia's resource sector to be price-competitive on a global scale.

As demonstrated in the Outback Communities Authority Region Economic Growth & Investment Strategy, employment in the OCA Region is concentrated in mining and related manufacturing (processing), utilities, construction, agriculture, transport, public administration and hospitality. The resources sector drives the Outback economy and, with the exception of agriculture, the activities of these other industries is underpinned by the success or otherwise of the resource sector.

The resource sector provides for the majority of jobs located in the OCA Region, accounting for over half (53%) of the total, compared to 26% of jobs located in the Far North Region. As the majority of South Australia's resource extraction activity takes place in the Far North, this highlights the significance of the resources sector to economic activity in the Outback. Although the resource sector is a large employer in the region, the drive-in drive-out and fly-in fly-out nature of employment in the resource sector is reflected in journey to work movements, which show only 22% of resource sector workers reside in the OCA Region. This also highlights the importance of road transport links, not just for the movement of freight, but also for the movement of workers.

Figure 2 - OCA Region Resource Sector Output as a Proportion of Total, 2017



Source: REMPLAN, August 2017

The total value-added estimate for the OCA Region is \$1.7 billion, which is 55% of the total for the whole Far North Region. The majority of the OCA Region's industry value-added is attributable to mining, which accounts for around three-quarters (74%) of the region's total value-added. Other notable contributors, which are closely linked to the region's resource sector activity, include utilities (7% of total value-added), which is underpinned by electricity generation and distribution, and construction (7%).

The resource sector is globally- oriented, with exports expected to account for over 70% of Australia's resource sector revenue in 2017-18 and these exports are projected to account for a greater proportion of revenue by 2022-23, due to a forecast increase in natural gas exports. The industry's performance depends on pricing, the value of the Australian dollar and global trends in supply and demand for commodities.

Resource sector operations are generally cyclical, as new supply takes years to develop. Depending on the commodity group, this cycle can play out over more than a decade. Furthermore, a large decline in capital expenditure in the resource sector over the past five years has resulted in employment falling significantly.

With lower commodity prices over the past five years, some resource sector companies moved from completing expansion programs to rebalancing their portfolios and implementing cost-reduction initiatives. However, revenue is projected to increase by 2.4% during 2017-18 as coal and natural gas prices increase, foreign demand grows and the weaker Australian dollar benefits export prices.

Production capacity expansions for a range of mineral commodities will be a key factor for Australia's ongoing resource sector growth. Growing output and continued export increases, particularly for iron ore and LNG, are expected to support growth over the next five years. Resource sector revenue is forecast to grow at an annualised 0.9% over the next five years through 2022-23, to reach \$229.6 billion. The resource sector is expected to benefit from export growth in coal as well as natural gas and iron ore.

IBISWorld identifies key success factors for the resource sector, including:

- Resource sector companies require access to extensive transport facilities including ports and rail routes as a large proportion of the industry's products are exported.
- Resource sector companies that operate close to major domestic and international markets can benefit from lower transport costs and higher profitability.

While the resource sector typically features high labour productivity, companies are looking to increase efficiencies. Downward price movements have amplified productivity issues over the past five years.

An issue that has become somewhat controversial is 'unconventional gas'. The Department for Manufacturing, Innovation, Trade, Resources and Energy (December 2012) published 'Roadmap for Unconventional Gas projects in South Australia' and stated:

The development of unconventional gas is proving to be positively transformational for North American economies and Australia is a first mover in developing shallow coal seam gas as feedstock for liquefied natural gas (LNG) export. In addition, when developed to leading practice standards for well integrity, gas is a much less carbon intensive fuel (than coal) for electricity supplies.

The report points out that this type of gas extraction is already established in the Cooper Basin and Moomba. A number of companies were actively involved in exploration in the region.

However, potential investors appear to be reluctant to proceed citing policy uncertainty as a risk factor (source: ABC Radio Adelaide, March 9, 2017).

3.2 The Strzelecki Track Upgrade as a Resource Sector Productivity Enhancer

The Department of Planning, Transport and Infrastructure (2015-2016 Assessment Brief) points out that the Strzelecki Track upgrade will provide an essential transport corridor to the expanding oil and gas industry in the Cooper Eromanga Basin in North East South Australia, increasing freight productivity and facilitating greater opportunities for trade and economic growth.

Consultation with stakeholders confirms that cost savings and productivity gains to the oil and gas sector will accrue from more efficient movement of supplies north from Adelaide to Moomba (travel time savings, maintenance cost savings and greater safety for drivers) and greater certainty of supply of key inputs.

It is clear from discussions with key players in the sector (e.g. Santos) that the main economic benefit would be delivered in the form of certainty and security of supply of material inputs (machinery and equipment, etc. from Adelaide). If there is greater certainty that the Strzelecki Track would remain open most of the year (because it is sealed and far less susceptible to weather events), resource sector operators could consolidate holding materials in Adelaide.

Having security of supply from the east (Brisbane-Toowoomba-Roma) to Moomba and from the south (Adelaide) would provide a significant operational benefit to all existing and potential future resource sector in the region.

Therefore, productivity enhancement will arise from:

- Reducing travel times and vehicle operating costs (including fuel, emissions and maintenance costs), particularly for heavy vehicles accessing the Santos oil and gas processing facility in Moomba from Port Augusta, as well as existing mining and onshore gas exploration in the Cooper Basin;
- Improving travel time reliability for freight (including gas, beef and cattle), tourists and people in remote communities by reducing the frequency/duration of road closures and providing safer opportunities for overtaking slower moving vehicles;
- Reducing the frequency and severity of crashes associated with overtaking, fatigue and the uneven road surface; and
- Improving access for high productivity freight vehicles.

The Australian Infrastructure Audit identifies the Strzelecki Track as a key freight route, on the basis that the economic contribution of the Cooper Eromanga Basin to the oil and gas industry may be significant. Improvements to the Strzelecki Track are identified in the SA Government's Roadmap for Unconventional Gas Projects in South Australia. The initiative also aligns with the South Australian Government's Strategic Priority of 'realising the benefits of the mining boom for all South Australians'.

4. Benefits to Agriculture and Pastoralism

4.1 Beef Cattle Industry Overview

The agricultural sector is a key industry in the Outback given its notable contribution to industry value-added, employment and regional exports, coupled with strong local linkages throughout the local economy. Beef cattle pastoralism is the principal agricultural industry in South Australia's Far North Region.

Like mining, agriculture in the OCA Region is export-oriented. As shown in the OCA Region Economic Growth & Investment Strategy, agriculture, which is the OCA Region's fourth-largest employer (5% of jobs) is also the region's fifth-largest contributor to regional exports, accounting for 1.4% of the total. The OCA Region's agricultural industry has strong backward (local) expenditure linkages with activity centred on livestock, grains and other agriculture.

According to IBISWorld (January 2017) challenging conditions have plagued Australia's beef cattle farming industry over the past five years. Varying weather patterns, fluctuating turnoff rates and government policies abroad have all influenced the industry's performance over the period.

Despite this, industry prospects are positive and immense saleyard price growth has helped the industry post a strong financial performance. Industry revenue is forecast to grow at an annualised 6.0% over the five years through 2016-17, albeit from a low base. Strong demand for Australian cattle and beef in export markets helped boost industry revenue over the three years through to 2015-16. Industry revenue is forecast to grow by 5.0% in 2016-17 to \$13.4 billion, supported by ongoing high saleyard prices.

The industry's prospects are expected to remain strong over the next five years and industry revenue is forecast to grow at an annualised 3.4% through 2021-22, to \$15.9 billion. Increasing meat consumption arising from higher incomes in overseas markets is expected to boost industry demand. The volume of live cattle exports is projected to increase in line with growing demand in Asian and Middle Eastern markets. Exports will be further aided by the expected ongoing low Australian dollar.

4.2 The Strzelecki Track Upgrade as a Beef Cattle Industry Productivity Enhancer

IBISWorld identifies the success factors for the beef cattle industry, including:

- Proximity to key suppliers including grain and hay wholesalers helps ensure a continuous supply of feed for beef cattle, especially during periods of extreme weather conditions.
- Proximity to key livestock markets reduces the length of time beef cattle are in transit. This reduces animal stress and fatality rates in transport and reduces transport costs for farmers.

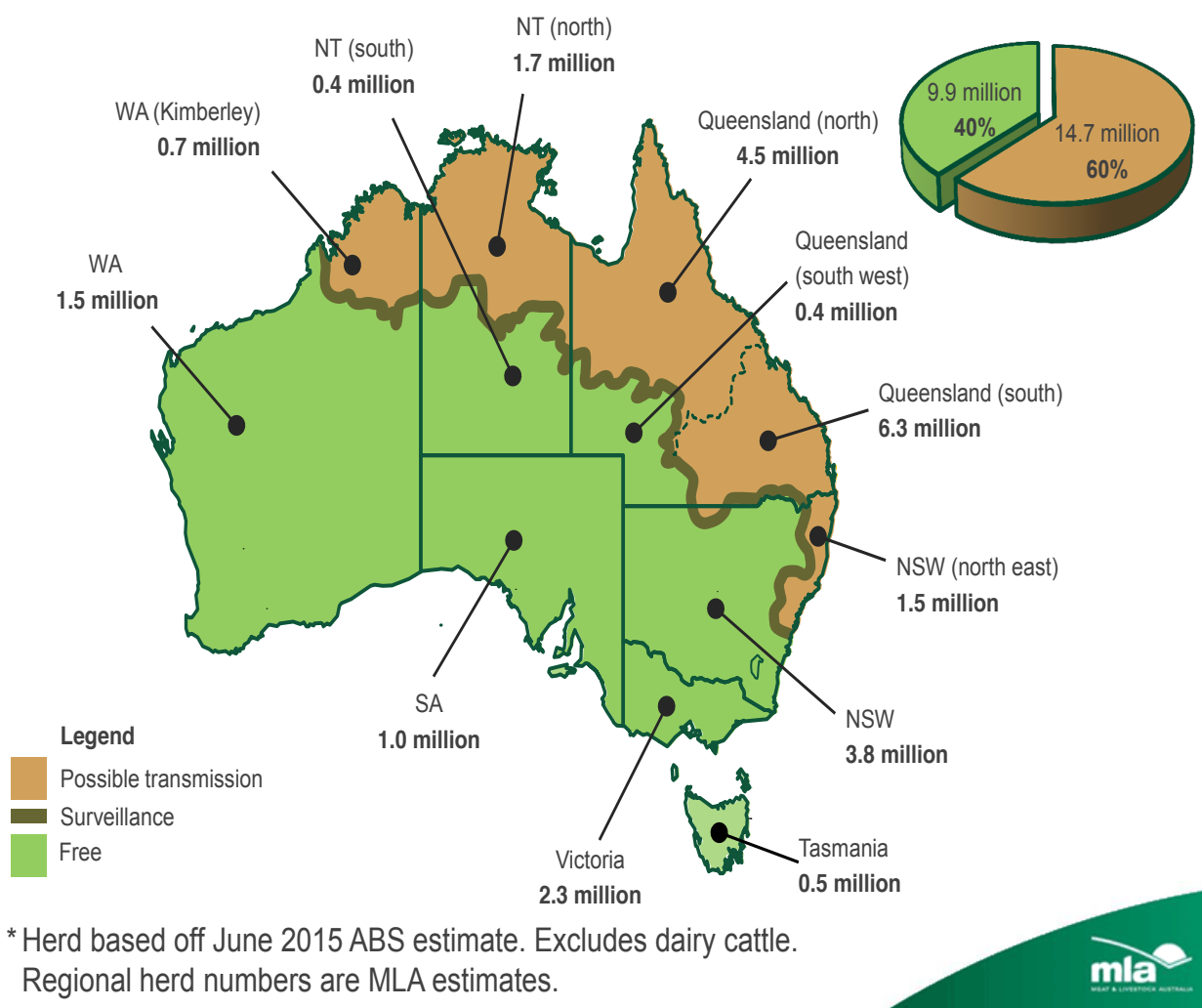
To be competitive, Australia's beef cattle industry requires an integrated transport network, providing more options for food producers. Hence the efficiency and reliability of transport networks is a key factor in industry productivity.

An issue affecting the cattle industry in Australia is Bluetongue Disease. Bluetongue is an insect-borne, viral disease that can affect sheep, goats, deer and cattle. Sheep are the most seriously affected species; clinical disease and mortalities occur and production and trade losses may result. The presence of Bluetongue can affect access to some international trade markets for cattle, sheep and goats.

Northern Australia and parts of NSW are affected by declared 'Bluetongue Virus Zones' as shown in the figure below.

Figure 3 – Blue Tongue Virus Zone

Beef cattle herd*: Blue Tongue Virus Zone



Source: Meat and Livestock Australia

With the sealing of the Strzelecki Track there is a potential to move cattle from areas outside the zone in Southwest Queensland and Western NSW to South Australia to feedlots and for processing including possibly live exports. Industry sources have suggested around 15% to 20% of herds in these areas could be diverted to South Australia. This equates to around 100,000 to 130,000 head of cattle.

This has the potential to deliver economic benefits throughout South Australia, not only in the Outback Region, through which greater livestock numbers would be transported, but also in nearby regions such as the Murraylands and Riverland Region to the south-east, where, utilising existing abattoir facilities and direct access to global transport connections, cattle can be processed into higher value products for overseas export.

5. Benefits to the Road Freight Industry

5.1 Road Freight Industry Overview

According to IBISWorld (September 2017) Australia's Road Freight Transport industry provides the primary mode of transport for non-bulk freight in Australia. The industry dominates Australia's transport and storage sector in terms of revenue and employment.

The Road Freight Transport industry is a critical component in many increasingly complex supply chains, as it provides quick and reliable door-to-door delivery nationwide. The industry services various clients, including many of the manufacturing industries. This diversification means that industry revenue is less volatile than revenue in individual major markets. The industry also services itself, with widespread subcontracting occurring among players.

5.2 The Strzelecki Track Upgrade as a Road Freight Industry Productivity Enhancer

The Transport and Infrastructure Council (National and Remote Regional Transport Strategy, undated) state that:

- Remote and regional Australia contributes significantly to Australia's economy.
- With its considerable resource and primary industry sectors, remote and regional Australia is responsible for 40% of Australia's Gross Domestic Product (GDP).
- Australia's remote and regional economy is fuelled by the primary production sector (pastoral, horticultural and agriculture, carbon farming, fisheries and aquaculture), tourism, manufacturing and mining.
- Over 60% of the nation's mining platform operates in remote Australia.

It appears axiomatic that high quality roads in remote areas are beneficial to the nation's economy; however, evaluation of such roads tends to focus on a narrow set of issues such as aggregate time savings, ignoring the economic contribution of the payload. This issue is dealt with in the following section.

6. Economic Benefits Quantified

6.1 Basis for Estimating Economic Benefits

Economic benefits to a region are generally measured in terms of 'value added':

Value-Added data represents the marginal economic value that is added by each industry sector in a defined region. Value-Added can be calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector, or alternatively, by adding the wages & salaries paid to local employees, the gross operating surplus and taxes on products and production. Value-Added by industry sector is the major element in the calculation of Gross Regional Product / Gross State Product / Gross Domestic Product (source: REMPLAN Economy Software, December 2017).

Economic benefits flowing from an investment are measured in terms of changes in value added. From an increase in output by an industry there is a corresponding creation of jobs in the region, including all direct effects and the industrial and consumption-induced 'multiplier' or flow-on effects. Detailed below are estimates of value-added increments and job creation associated with sealing the Strzelecki Track. The first step in estimating uplift in value-added is to estimate the uplift in output generated in the various sectors:

- Tourism;
- Resources;
- Beef Cattle Production; and
- the Road Freight Industry.

Each is addressed in turn below.

6.2 Uplift in Tourism Sector Output

It has been estimated above that there is a potential uplift in tourism spending in the order of \$17.42 million per annum in year ten after a 'ramping up' period. According to REMPLAN this can be distributed to various industry sectors as per Table 1.

Table 1 – Distribution of Tourism Spending Uplift to Industry Sectors

Distribution of Tourism Dollar (source: REMPLAN)	Percent	\$ Uplift (Millions)
Accommodation and Food Services	79%	\$13.76
Ownership of Dwellings	0%	\$0.00
Transport, Postal and Warehousing	9%	\$1.57
Retail Trade	5%	\$0.87
Arts and Recreation Services	2%	\$0.35
Administrative and Support Services	2%	\$0.35
Education and Training	1%	\$0.17
Wholesale Trade	1%	\$0.09
Manufacturing	1%	\$0.09
Rental, Hiring and Real Estate Services	1%	\$0.17
Totals	100%	\$17.42

Source: REMPLAN and SC Lennon and Associates

6.3 Uplift in Resources Sector, Beef Cattle Production and Road Freight Industry Output

It is not possible to empirically forecast the uplift in output to flow from the Strzelecki Track upgrade for these sectors however it is possible to make a reasonable estimate based on the discussion above about the productivity enhancements that the project can deliver. On this basis, it is conservatively estimated that there will be a 5% uplift in output in all three sectors – resources, beef cattle production and road freight - by year ten post sealing.

Table 2 shows the output uplifts for all industry sectors relative to current levels of outputs.

Table 2 – Estimates of Output Uplifts

All industry sectors in OCA Region ranked by Output		Output Uplift (Year 10)				
OCA Region (Aug 2017)	REMPPLAN	Tourism	Mining	Beef Cattle	Road T'sport	
Industry Sector	Output \$M	\$17.42	5%	5%	5%	Totals
Mining	\$2,846.29		\$142.31			\$142.31
Construction	\$297.93					\$0.00
Electricity, Gas, Water & Waste Services	\$264.97					\$0.00
Manufacturing	\$178.09	\$0.09				\$0.09
Rental, Hiring & Real Estate Services	\$85.26	\$0.17				\$0.17
Agriculture, Forestry & Fishing	\$66.33			\$3.32		\$3.32
Accommodation & Food Services	\$49.38	\$13.76				\$13.76
Administrative & Support Services	\$46.96	\$0.35				\$0.35
Transport, Postal & Warehousing	\$42.18	\$1.57			\$2.11	\$3.68
Wholesale Trade	\$38.35	\$0.09				\$0.09
Professional, Scientific & Technical Services	\$26.18					\$0.00
Other Services	\$18.28					\$0.00
Public Administration & Safety	\$12.80					\$0.00
Health Care & Social Assistance	\$10.64					\$0.00
Education & Training	\$10.41	\$0.17				\$0.17
Retail Trade	\$9.06	\$0.87				\$0.87
Information Media & Telecommunications	\$4.78					\$0.00
Arts & Recreation Services	\$0.90	\$0.35				\$0.35
Financial & Insurance Services	\$0.00					\$0.00
Total	\$4,008.79	\$17.42	\$142.31	\$3.32		\$165.16

Source: REMPLAN and SC Lennon and Associates

It can be seen from the table that the majority of output uplift is derived from the resource sector. The total output uplift is \$165.16 million per annum.

The estimates of output uplifts have been provided as input to the REMPLAN impact assessment model with the results shown in Table 3 below.

Table 3 – Economic Impacts Summary

Impact Summary

Impact Summary	Direct Effect	Industrial Effect	Consumption Effect	Total Effect
Output (\$M)	\$165.160	\$25.028	\$15.121	\$205.308
Employment (Jobs)	293	69	48	410
Wages and Salaries (\$M)	\$22.275	\$5.313	\$2.666	\$30.254
Value-added (\$M)	\$67.982	\$10.060	\$8.977	\$87.018

Source: REMPLAN

6.4 Impact on Output

From a direct increase in output of \$165.160 million it is estimated that the demand for intermediate goods and services would rise by \$25.028 million. This represents a Type 1 Output multiplier of 1.152. These industrial effects include multiple rounds of flow-on effects, as servicing sectors increase their own output and demand for local goods and services in response to the direct change to the economy.

The increases in direct and indirect output would typically correspond to the creation of jobs in the economy. Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated at \$15.121 million.

Total output, including all direct, industrial and consumption effects is estimated to increase by up to \$205.308 million. This represents a Type 2 Output multiplier of 1.243.

6.5 Impact on Wages and Salaries

From a direct increase in output of \$165.160 million it is estimated that direct wages and salaries would increase by \$22.275 million. From this direct expansion in the economy, flow-on industrial effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in the gain of a further 69 jobs and a further increase in wages and salaries of \$5.313 million. This represents a Type 1 Wages and Salaries multiplier of 1.238.

The increase in direct and indirect output and the corresponding creation of jobs in the economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are expected to further boost employment in sectors such as retail therefore further increasing wages and salaries by \$2.666 million.

Total wages and salaries, including all direct, industrial and consumption effects is estimated to increase by up to \$30.254 million. This represents a Type 2 Wages and Salaries multiplier of 1.358.

6.6 Impact on Value-Added

From a direct increase in output of \$165.160 million the corresponding increase in direct value-added is estimated at \$67.982 million. From this direct expansion in the economy, flow-on industrial effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in a further increase to value-added of \$10.060 million. This represents a Type 1 value-added multiplier of 1.148.

The increase in direct and indirect output and the corresponding boost to jobs in the economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are expected to further boost value-added by \$8.977 million.

Total value-added, including all direct, industrial and consumption effects is estimated to increase by up to \$87.018 million. This represents a Type 2 Value-added multiplier of 1.280.

6.7 Impact on Employment

From a direct increase in output of \$165.160 million the corresponding direct employment impact is the creation of an estimated at 293 jobs. From this direct expansion in the economy, flow-on industrial effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in the gain of a further 69 jobs. This represents a Type 1 Employment multiplier of 1.235.

The increase in direct and indirect output and the corresponding creation of jobs in the economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated to further boost employment by 48 jobs.

Total employment, including all direct, industrial and consumption effects is estimated to increase by up to 410 jobs. This represents a Type 2 Employment multiplier of 1.399.

6.8 Community Benefits

The Strzelecki Track provides a vital link for pastoralists, townspeople and indigenous communities to access services to the south that are not available in the area. This includes health, education, community and emergency services.

The isolation of Australia's remote areas can have a negative impact on those people living in these areas. The Strzelecki Track upgrade will ensure that more reliable access is improved for these remote and isolated communities, businesses and individuals.

6.9 Cost-Benefit Analysis

The Transport and Infrastructure Council (ibid) deals with the difficulty in evaluating remote road projects on a conventional cost-benefit basis. Lower volumes on remote and regional roads, combined with higher construction costs, create a challenging set of circumstances for remote and regional based projects to achieve a positive benefit-cost ratio (BCR).

Currently the National Guidelines for Transport System Management (NGTSM) acknowledge this problem, and identify alternative tools in the project appraisal process, which allow the decision maker to consider non-monetised benefits (such as equity, social inclusiveness, sustainability and biodiversity and convenience). However, these have no impact on the final BCR as the benefits are not monetised.

The NGTSM suggests that non-monetised benefits can be balanced against the cost-benefit analysis (CBA) results using the following complementary tools:

“Initiatives in less densely populated areas tend to achieve lower usage rates. Benefit cost ratios are therefore generally lower, making it more difficult for initiatives to pass the economic efficiency test of the CBA. In these cases, government policy may require greater weight to be given to social, access or equity objectives, relative to economic efficiency (i.e. CBA results)”.

The Guidelines cater for this through the Strategic Merit Test (SMT), the Appraisal Summary Table and the adjusted CBA. Business cases usually also contain explicit reporting of distributional, equity and social impact assessments. The SMT results can be reported at multiple levels (e.g. high pass, low pass, fail) to highlight initiatives that score particularly well on achieving government objectives.

Adjusted CBAs can include a distributional multiplier to tilt the assessment process in favour of initiatives that benefit certain communities (e.g. regional or remote areas). It is still important to undertake a CBA so that initiatives with negative net benefits (net present value < 0) will only be approved where the initiative is considered highly desirable for other reasons.

Notwithstanding the general view that remote road projects seldom achieve a positive benefit cost ratio the Department of Planning, Transport and Infrastructure (ibid) has undertaken a preliminary (subject to more detailed design and cost estimates) cost-benefit analysis of the proposed Strzelecki Track sealing project from a transport efficiency gain point of view. Key variables tested (for heavy and light vehicles) were:

- Travel time savings.
- Fewer road closures.
- Lower vehicle operating costs.
- Fewer crashes.

The net present value of the option was assessed at \$1.3 billion, with a benefit-cost ratio (BCR) of 4.9:1. It is stated “the strong BCR has been shown to be robust to several sensitivity tests, but is particularly sensitive to the estimated freight task servicing the Cooper Eromanga Basin (accounting for 62% of the project benefits)”.

The details of the cost-benefit analysis have not been available therefore no conclusion is drawn on the efficacy of the result. According to the Department of Planning, Transport and Infrastructure, the analysis will be updated when cost estimates are refined and traffic forecasts are updated. However, it is still possible to make estimates of the economic benefits that are likely to flow from the investment, as shown below.

6.10 Implications of Wider Economic Benefits

It is shown above that the proposed Strzelecki Track sealing project has potential to deliver a 'value add' to the economy in the order of \$87 million in year 10 after a ramp-up period. If this is projected out over 40 years and discounted at a rate of 5% per annum the present value of the benefit stream is \$1.4 billion. Given the nature of the assumptions that have had to be made, the tolerance should be around +/- 30%. Hence the range is between \$1.0 billion and \$1.8 billion.

Given that the Department of Planning, Transport and Infrastructure estimated the present value of direct transport benefits to be \$1.3 billion, **consideration of wider economic benefits has a potential to double this figure to between \$2.3 billion and \$3.1 billion.**

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