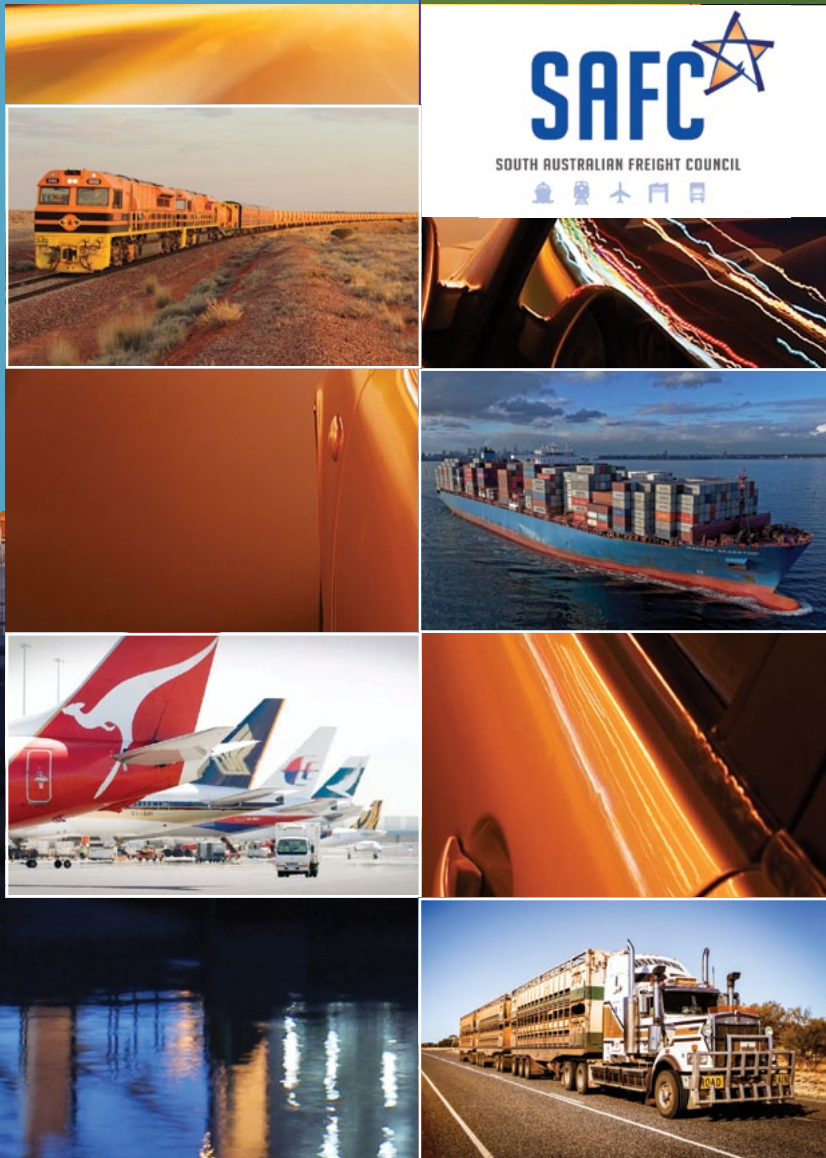


South Australia's Freight Transport Infrastructure

Moving Freight 2019 “Towards a 20 Year State Infrastructure Strategy”



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SOUTH AUSTRALIAN FREIGHT COUNCIL



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The South Australian Freight Council Inc is the State's peak multi-modal freight and logistics industry group that advises all levels of government on industry related issues. SAFC represents road, rail, sea and air freight modes and operations, Freight service users (customers) and assists the industry on issues relating to freight and logistics across all modes.

Disclaimer: While the South Australian Freight Council has used its best endeavours to ensure the accuracy of the information contained in this report, much of the information provided has been sourced from third parties. Accordingly, SAFC accepts no liability resulting from the accuracy, interpretation, analysis or use of information provided in this report. In particular, infrastructure projects and proposals are regularly adjusted and amended, and those contained in this document, whilst accurate when sourced, may have changed and/or been amended.

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Chairman's Statement



The South Australian transport and logistics industry underpins every aspect of our state economy and is a key sector in determining our future prosperity.

Indeed, there probably is no other sector that has such an impact on our daily lives.

Transport and logistics infrastructure supports efficient and effective operations across all four modes and is critical to ensuring that the State's economic and community development aspirations can be achieved.

Every business requires inputs to be delivered to their facilities and (for many) transport and logistics services that deliver their products to customers and end consumers.

Our industry requires "fit for purpose" infrastructure so that we can continue to pick up and deliver your goods on time every time, where and when you want them. Efficient, effective and productive infrastructure delivers a competitive advantage that as a state and nation we cannot afford to ignore.

We need efficient and competitive access to ports and airports, rail and road freight terminals, factories, distribution centres and warehouses wherever our customers are, and whenever they need it. We need access to farms and orchards, mines and storage facilities, abattoirs and pack houses, shopping centres, individual supermarkets and private homes using the best mode and vehicles for the task. We need access in remote areas, regional communities and in the metropolitan area.

There has been some recent good progress in building and upgrading the transport infrastructure projects that SAFC prioritised in its 2012 Moving Freight document (the third iteration of the document), but equally for other projects listed the progress has been slower or even non-existent.

Notably, since 2012 the State and national economies have experienced a downturn in some key sectors such as car manufacturing, which has led to a reassessment of economic priorities and attendant transport infrastructure project priorities and implementation timeframes. Conversely, solid economic development opportunities in defence, agriculture and mining have weathered the storm, moving into production or having renewed potential, and associated infrastructure needs to be reinvestigated.

The eight 'Urgent' projects outlined in this document are critical for South Australia's short and long term economic prosperity and need to be funded (and in most instances built) in the next five years. SAFC has also outlined a pipeline of 'High' priority projects that will need to be built shortly thereafter, as well as future projects that will be required beyond a ten year timeframe. Projects that are 'Subject to demand' – dependant on associated freight demand projects proceeding – are also included to provide advance notice to planners.

Governments will not be required to fund all of these projects – many will be funded by industry, but will require government approvals to proceed.

SAFC and its broad multi-modal and full supply chain membership stands ready to work with Local, State and Commonwealth Governments, industry and the broader community to inform the debate and progress transport infrastructure proposals that will realise our collective ambitions for economic, social and environmental development.

Phil Baker
Chairman, South Australian Freight Council

All businesses and all communities rely on the transport and logistics sector to pick up and deliver goods. For example, grain is grown in regional areas using a variety of inputs - seed, fertiliser, heavy equipment and fuel. Harvested grain moves from farm to silo to millers; flour is delivered to bakeries; bread is delivered to supermarkets. New refrigerators are imported through our ports and delivered to our homes – but every component also has a transport story.

Every physical good and most service elements of the economy have a freight cost component. South Australia, like large parts of the national and global economy continues to confront a changing economic structure and climate. Old industries are in decline. New industries are emerging. Technology is impacting our daily activities, including the way that we conduct business and the systems and equipment that we use to interact with each other.

The South Australian Freight Council (SAFC) Membership, directly and indirectly representing many thousands of businesses in this State, has developed this document as our principal policy statement on transport infrastructure needs. Through consultation we have detailed the transport infrastructure upgrades that can assist industry and community to respond to the ever changing global marketplace.

It provides a plan for how the State's transport infrastructure can be enhanced by all three levels of government as well as the private sector, and highlights specific urgently required transport infrastructure project priorities. It also forms our primary submission into the South Australian Government's promised 20 year State Infrastructure Strategy.

SAFC contends that the following core principles and policy issues should be considered whenever assessing transport infrastructure issues:

- Freight transport underpins the community;
- The provision and proper maintenance of the core transport network is a primary responsibility of governments and requires community acceptance;
- Infrastructure network planning and development must deliver long term confidence and certainty; and
- The State's infrastructure assets, policies and regimes must facilitate multi-modal balance.

Given these Core Principles and Policy Issues SAFC urges all three levels of Government to consider Core Infrastructure Criteria to ensure that the freight transport network:

- Is efficient and effective;
- Is fit for purpose;
- Facilitates internationally competitive outcomes;
- Is genuinely multi-modal;
- Provides the capacity to meet ongoing and projected freight demands;
- Is flexible, resilient and balanced;
- Supports economic development;
- Is funded for the life of the project and the asset; and
- Is sustainable in economic, social and environmental terms as well as for individuals.

Transport planning frameworks need to highlight the importance of a strategic infrastructure network. There must be a focus on strategic, multimodal core networks funded for the life of the asset, and able to handle the major share of the future economic growth and resultant transport and logistics tasks.

As part of the development of the 20 year State Infrastructure Strategy, SAFC calls on the State Government to work with industry and other key stakeholders to develop a much needed 'Key Freight Corridors and Facilities Protection Strategy' and a 'Network Resilience Strategy' initially covering identified key freight corridors and precincts.

Executive Summary

(Continued)

Through member and key stakeholder consultation, SAFC has identified the projects that are crucial to lifting South Australia's transport infrastructure to a level that is comparable nationally and competitive internationally. These projects have been assessed and prioritised in terms of the contribution that SAFC believes they can make to the achievement of economic, social and environmental objectives.

Projects have been categorised into 4 categories, namely:

- **Urgent Projects** that need to be implemented immediately so as to deliver a lift to South Australia's competitive position and to ensure continued safe and efficient operations for the freight and logistics sector and other network users;
- **High Priority Projects** that need to be delivered in a 5-10 year period so as South Australia can maintain its competitive position in the short term;
- **Future Projects** that are expected to be delivered in the medium term – beyond a 10 year timeframe and will be necessary if the State is to continue to move forward and grow; and
- **Subject to Demand Projects** that will need to be implemented only if and when sufficient demand eventuates. Implementation could commence in the near term, given the necessary demand and project approvals are in place. Equally, these projects may never be implemented if associated freight generating development projects do not proceed to production.

The identified “Urgent Projects” requiring immediate attention are:

- **Completion of the North South Corridor** - Completion of the upgrade of the non-stop North-South corridor remains industry's top Priority Project and has progressed reasonably to date, but will slow over coming years. The pace of the upgrade needs to quicken so as benefits of works completed and underway can be fully realised;
- **Eyre Peninsula Road Upgrades** – With the cessation of grain transport on the EP rail system, thousands of new truck movements are expected in the region to deliver grain to ports. Priority safety upgrades are urgently needed to ensure the new mix of traffic on key highways is safe;
- **Accelerated Maintenance Regime** - maintenance spending has decreased in recent budgets and a maintenance backlog in the hundreds of millions of dollars is widely referenced. In particular, SA requires an urgent lift in maintenance spending on economic corridors that provide crucial links for communities and their markets;
- **Airport East Precinct Freight Development (including connecting roads)** - air freight cargo facilities will be progressively relocated to airside sites within the Airport East Precinct to facilitate export growth. Richmond Rd will become the designated access corridor into this precinct, with Transport Avenue also playing a critical role;
- **Horrocks Highway** - requires a priority safety upgrade, especially between Roseworthy and Clare, which is increasingly seeing larger and more efficient heavy vehicles moving on the corridor;
- **Upgrade of Highway 1 Port Wakefield to Port Augusta (PBS4/Triple Road Train capability)** – to facilitate the expanded heavy freight needs of growing communities and industries in the Upper Spencer Gulf Region (including Port Augusta, Whyalla and mines beyond); as well as facilitating the safe expansion of passenger movements to/from the region;
- **Rail Level Crossing Grade Separation Program** – to reduce road congestion and increase safety. Some individual level crossing works have been announced and funded, but an overarching program has not yet been developed. Freight lines cater to trains up to 1.8 km long, leading to long delays and frustration for motorists and therefore should be a priority within the program; and
- **Widening the Outer Harbor Shipping Channel (Underway)** – to accommodate Post-Panamax vessels calling to Australia, ensuring economic port operations are maintained to support South Australian trade and avoid use of other Australian ports and land routes for import and export trades.

Introduction

South Australia's relative isolation from key national and international markets means that we have a particularly high reliance upon competitive transport infrastructure. Every commodity or good that we grow, mine or manufacture, whether it be in the regions or an urban area is confronted by longer transport distances to market and relatively higher freight costs than many of our competitors.

Focussing on Asian markets, rather than historically traditional markets in Europe and the US has assisted us in reducing the negative impacts of distance, but can never eliminate it entirely. Improving transport productivity through more efficient infrastructure and the economy of scale emanating from the use of larger freight units (bigger trains, planes, ships and trucks) can improve our competitive position and go a long way towards improving the future prosperity of the State.

As the State economy transitions to new industries every unit of transport time and cost saved will be critical to determining our competitiveness and the success or otherwise of our efforts to grow our local, State and national economy and improve our standard of living.

Investment in transport infrastructure can deliver benefits to a broad range of industry sectors and the community at large. It is crucial in ensuring that we can cope with the challenges ahead, and will play a vital role in facilitating local and national economic planning. Investment in transport infrastructure can:

- help Australia and South Australia to capitalise on economic development opportunities in mining, agriculture and value-added manufacturing;
- allow the State and the nation to cope with the forecast increase in the freight task safely and efficiently;
- help Australia and South Australia to accommodate population growth. The Australian Infrastructure Audit¹ prepared by Infrastructure Australia projected that by 2031, Australia's population will have grown to more than 30 million people. Adelaide's population is expected to grow by 26% over the same period;
- improve the productive capacity of the economy leading to broad and specific productivity gains for the transport and logistics industry and its customer sectors;
- create jobs both directly through the planning, design and construction phases as well as indirectly through demand for materials and services; and
- improve safety for all users of the transport network.

A 1% gain in transport efficiency is estimated to add \$2 billion per annum to our Gross Domestic Product². A 2010 study commissioned by SAFC concluded that 'a 10% efficiency improvement could increase Gross State Product annually by \$810m and result in the order of 8500 new jobs².

The NTC recently found that the national domestic freight task has increased 50% in the 10 years to 2016 and is forecast to grow another 26% by 2026, and for the 10 years to 2013/14 the domestic freight task (road and rail) in SA increased 2.6% per annum compared with a 1.97% growth in GDP³.

Providing an efficient freight and logistics network to industry will benefit every business through reduced costs structures; and every household through reduced costs for consumer goods. Every physical good and most service elements of the economy have a transport cost component.

The transport and logistics sector directly contributes an estimated 6.9% to South Australia's Gross State Product², is a key employer and contributes significantly to the success of almost every sector of the State and national economies.

Introduction (Continued)

Any efforts to improve the efficiency of the transport and logistics sector will assist all industries to access their markets at lower cost.

The table below outlines the benefits that accrue from freight related infrastructure investment which are assessed by Infrastructure Australia when reviewing and prioritising projects seeking a Commonwealth funding contribution (up to 80%).

Typical monetised benefit and cost items: Freight Transport

Private benefits and costs (for users and producers)	External benefits and costs (for the broader community)
<p>Project costs and benefits:</p> <ul style="list-style-type: none"> Investment and ongoing project expenditure, e.g. operating expenditure, maintenance costs, decommissioning costs <p>User value (commercial and private consumers of freight transport infrastructure), e.g. increased surplus from:</p> <ul style="list-style-type: none"> Timeliness/speed – Changes in freight travel times (e.g. faster loading, improved network speeds) Increased capacity – Change in tonnes of freight transported along the network Reliability – Changes in unscheduled delays Other quality measures – Changes in flexibility of supply chains (e.g. ability to provide freight services when and where required) Safety and security Changes in vehicle operating costs (perceived and unperceived) Residual values <p>Producer value (producers of freight transport services and/or infrastructure), e.g. increased surplus from:</p> <ul style="list-style-type: none"> Expenditure avoided, e.g. savings in operating, maintenance, compliance and investment Increased freight operating margin Increased government revenue (e.g. access charges) 	<p>Environmental:</p> <ul style="list-style-type: none"> Changes in values associated with environmental externalities, including noise and vibration, local air pollution, greenhouse gases (e.g. CO₂, CH₄, NO_x) Climate change <p>Social/cultural:</p> <ul style="list-style-type: none"> Changes in values associated with aesthetics and visual amenity (e.g. from fewer heavy vehicle movements) Changes in heritage values, including Aboriginal sites of importance or to historic buildings, sites and landscapes affected by freight supply chains <p>Safety and network:</p> <ul style="list-style-type: none"> Changes in crash costs (e.g. from fewer heavy vehicle movements) Road network decongestion <p>Other:</p> <ul style="list-style-type: none"> Competition benefits taking into account the behaviour of competitors who may have a degree of market power Consequential costs during construction (e.g. noise, delay, congestion during, displaced economic activity etc.)

Introduction (Continued)

In general, through the assessment criteria, Infrastructure Australia considers the overall costs and benefits of a particular project (construction, and whole of life maintenance, crash costs, improved land values etc.); who the beneficiaries or impacted parties are (generally industry and/or the broader community) and how they are expected to benefit or be negatively impacted (faster travel times, cleaner environment, construction noise). All costs and benefits are given a dollar value. After all of the benefits and costs have been determined and tallied, competing projects can then be compared.

SAFC expects that Infrastructure South Australia will take a similar economic analysis approach to assessing and prioritising infrastructure proposals.

This document, Moving Freight, is SAFC's principal public policy document on transport infrastructure principles and project priorities, and forms our primary submission into the promised 20 year State Infrastructure Strategy which will be developed by Infrastructure South Australia. It complements other SAFC key policy statements and submissions including:

- **Regulating Freight 2017**, a blueprint for how transport regulation should be reformed;
- **Moving Freight: The First and Last Mile**, outlining opportunities to improve transport productivity through improved access for heavy vehicle combinations on key freight corridors; and
- **Green Freight**, a report intended to increase awareness, discussion and prompt action on environmental matters of relevance to the freight industry.

These documents and more are available through the publications page of the South Australian Freight Council's website – www.safreightcouncil.com.au.



Core Principles and Policy Issues

All freight transport planning documents - including the 20 Year State Infrastructure Strategy - must address the following principles and key policy issues:

Freight transport underpins the community:

Freight infrastructure and the freight transport industry exist to serve the interests and daily needs of business and the community.

- Freight transport is a derived demand – it arises from the original demand from businesses and the community for specific products and their transport and handling. People demand the product, the freight transport sector moves it to them, and it also removes the by-products and waste of the community and manufacturing.

Core government responsibility and community acceptance:

Governments at all three levels have the primary responsibility to ensure the provision and proper maintenance of the core transport infrastructure network to meet the needs of the community and the commercial sector today and for future generations.

- Full funding of the core transport infrastructure network, for new projects and ongoing maintenance over the life of the asset, must be a first-order priority for all governments. Funding may be through government, private sector and/or public private partnerships (PPP), or other funding mechanisms.
- Governments and businesses must raise the community's awareness and acceptance of the necessity of the transport infrastructure network to support the community's needs. In turn, the community must acknowledge the need to allocate substantial government funding for transport infrastructure as a high order priority to support their way of life and general economic prosperity.

Long-term confidence and certainty:

Freight infrastructure network planning and development must be managed in a manner that provides the community and the business sector with the necessary certainty and confidence to undertake sound commercial decisions and the long-term investments required for the State to be nationally and internationally competitive.

- Governments and industry partners must deliver the infrastructure network as planned, and on time, and the network must perform reliably, to the desired standard, on a consistent and sustainable basis.
- Freight corridors, infrastructure and precincts must not subsequently be encroached upon or be downgraded by urban sprawl and inappropriate adjacent developments.

Facilitate multi-modal balance:

The infrastructure assets, policies and regimes implemented by governments must facilitate genuine and effective modal choice and a sound balance in the use of the four modes – air, sea, rail and road.

- SAFC represents all freight transport modes and has no underlying preference for any given mode. We support the utilisation of the most appropriate mode/s for any given freight task and region.
- Governments should not artificially manipulate unsustainable modal choices for freight, through subsidies or other means, as this results in inefficient outcomes, which are counterproductive for the economy, society and the environment.
- SAFC acknowledges that it is not necessary to make all competitive modes available to all customers in all instances. There will be situations where the provision of an efficient and effective network for one mode (say rail) will negate the need to upgrade modal alternatives (say road).

Core Infrastructure Criteria

Given the Core Principles and Policy Issues, the 20 Year State Infrastructure Strategy must ensure that South Australia has a freight transport infrastructure network that meets the following criteria:

- Is **efficient and effective**; benefiting the entire community by reducing costs and increasing economic viability through:
 - Improving the free flow of freight;
 - Decreasing congestion which, in turn:
 - Decreases safety risks; and
 - Decreases the adverse environmental impacts of fuel and noise emissions.
- Is **fit for purpose and provides the capacity to meet the ongoing and projected freight demands** of the community and the economy, including reliably performing at the levels of safety, efficiency and effectiveness demanded by industry and the community.
- **Supports economic development by facilitating internationally competitive transport outcomes including:**
 - **Access** – meeting the accessibility requirements of industry, including connectivity;
 - **Accommodating** the vehicles, trains, vessels and aircraft that industry requires now, and in the future, to remain competitive in its markets;
 - **Competitiveness / pricing** - freight logistics costs are a significant component of overall manufacturing and commodity costs and, as such, the marketability of the products is very sensitive to increased freight transport costs which must be minimised to avoid any negative impact upon the competitiveness of South Australian (and Australian) products in their respective markets;
 - **Attractiveness** to business and potential investors in the State; and
 - **Delivering a competitive advantage** to South Australian businesses exporting to international markets.
- Is **genuinely multi-modal** and provides for efficient modal-interchange.
- Provides the **flexibility** to facilitate a responsive freight transport system capable of meeting emerging needs and trends.
- Is **resilient** and able to withstand incidents and weather shocks with appropriate contingency plans and alternatives available so as to minimise disruption and ensure 24/7 access 365 days each year.
- Is **funded for the life of the project and the asset** - both new infrastructure and, importantly, the maintenance of existing infrastructure for its effective working life, must be fully funded.
- Is **balanced and sustainable** in economic, social and environmental terms, as well as for individuals.

SAFC urges all three levels of government to implement these principles when considering and planning for new infrastructure, as well as assessing the usefulness of existing infrastructure.

Overarching Strategy Needs and Integration

Government planning, policy and strategy documents are critical to businesses within the transport and logistics industry – they provide key information that informs strategic business decisions, such as where to build new facilities or what fleet of trucks and trailers to buy.

The 20 Year State Infrastructure Strategy must provide clarity and detail government intent in regards to infrastructure development and maintenance, future route capacity (incorporating freight task modelling), protection of transport corridors and facilities from urban encroachment and incompatible uses, modal choice issues, enhancing Restricted Access Vehicle (RAV) access and integrating transport and land use planning.

All modes (Road, Rail, Sea, Air and Pipelines) and strategic facilities (Ports, Airports, Intermodal Terminals, Warehouses, Cold Stores and Freight Depots) should be included.

It must accommodate current and future demand scenarios and need to be flexible so as to cater for unexpected outcomes and unexpected consequences.

Transport planning frameworks need to highlight the importance of a strategic infrastructure network. There must be a focus on interlinked multimodal core networks funded for the life of the asset, able to handle the major share of the future economic growth and resultant transport and logistics tasks.

The 20 Year State Infrastructure Strategy will need to build upon, integrate with, and in some instances replace several key planning and strategy documents that have gone before – so as to collectively form a clear strategic framework that is available for broad consumption:

- **Replace and/or Update** the former government's 2015 Integrated Transport and Land Use Plan (ITLUP) which provided comprehensive and integrated plans for land use, infrastructure and transport in SA over a 30-year period. Industry appreciated the clear timelines for infrastructure development that ITLUP provided and would like to see these retained in the new Strategy.
- **Integrate and Expand upon** DPTI's important (but little known) document A Functional Hierarchy for South Australia's Land Transport Network identifying key corridors and their primary purposes (so these can be protected), noting:
*'The role of freight routes is to cater safely and efficiently for freight vehicles for up to 24 hours a day, seven days a week. These routes need to provide optimal travel efficiency and reliability of travel times throughout the day for heavy vehicles, especially when freight and commuter peak periods coincide.'*¹⁴
- **Integrate with** the South Australian Planning Strategy and its plans for the seven regional areas of the state, as well as the 30-Year Plan for Greater Adelaide (updated in 2017). These plans contain directions on land use and development for governments, the community and industry.
- **Incorporate a** Key Freight Corridors and Facilities Protection Strategy that supports the Functional Hierarchy document and identifies critical infrastructure corridors and key facilities, reserves land early and provides buffers against incompatible adjacent land use, thereby supporting economic growth and reducing infrastructure costs through early corridor acquisition and preservation. Current and future uses should be public and well known thereby reducing future social costs.
- **Incorporate a** Network Resilience Strategy that recognises the importance of critical infrastructure and describes how to better manage both foreseeable and unexpected risks to our critical infrastructure assets, supply chains and networks, ensuring their availability for 24 hours each day, 7 days each week, and for 52 weeks of the year. Ongoing infrastructure maintenance standards should be included in this element.
- **Integrate or Replace** the State Ports Strategy that was progressing towards imminent release for broader stakeholder input under the previous government. There are many new and expanded port projects emerging and it is clear that ports will play a key role in project viability, particularly for mining ventures. This Strategy will provide guidance and coordination to ensure that the right ports are facilitated in the right places at the right time. SAFC prefers that it is integrated with the 20 Year State Infrastructure Strategy.

Overarching Strategy Needs and Integration (Continued)

Integration of the above elements into the 20 Year State Infrastructure Strategy will ensure that it captures all necessary topics to guide infrastructure investment decisions – for both businesses and Governments alike.

At the Commonwealth level, recent Governments have advanced transport and infrastructure planning for the nation, principally through the establishment, resourcing and development of a comprehensive Work Plan for **Infrastructure Australia (IA)**, a statutory body with a mandate to research, prioritise and progress nationally significant infrastructure issues, including:

- the **Australian Infrastructure Audit**, taking a strategic approach and assessing the Direct Economic Contribution and future demand for infrastructure (15 years), delivering an evidence base for further gap analysis, long term planning and future investment priorities;
- the **Australian Infrastructure Plan** which sets out infrastructure challenges and opportunities facing Australia over the next 15 years and what is required to drive productivity growth, maintain and enhance our standard of living, and ensure our cities remain world class;
- **Nation Building: Australia's Infrastructure Priorities** which identifies potential infrastructure solutions over the next 15 years and is updated regularly;
- the **National Land Freight Strategy and the National Ports Strategy**, both key documents in articulating key issues and opportunities confronting our logistics chains; and
- **Corridor Protection: Planning and investing for the long term**, urging Governments to take action to protect corridors, to avoid cost overruns, delays and community disruption.

SAFC strongly commends the intent of the Commonwealth Government's commitment to develop a National Freight and Supply Chain Strategy to develop an integrated plan to guide investment and reform.

The National Freight and Supply Chain Strategy must be national, addressing the needs of all States and Territories: must be integrated covering all communities big, small, urban, regional or remote and all modes; must integrate land use and infrastructure planning; and must be long term in its vision (20-30 years minimum). SAFC is keen to ensure that the strategy is developed with an overarching theme of inclusiveness, and that key elements of the strategy apply equally across the nation.

SAFC's broad multi-modal membership provides extensive insight into freight and logistics operations and industry requirements and is keen to assist the State, Commonwealth and Local Governments in the development, finalisation and ongoing review of the various plans and strategies, thereby ensuring that they facilitate economic activity and development opportunities.

Protecting Freight Capability - A Public Asset

Governments need to ensure that planning regimes can accommodate the needs of both industry and the community wherever possible. These regimes need to be stable so as to guide industry investment in the short, medium and longer terms, whilst maintaining responsiveness and flexibility to cater for a changing environment, emerging trends and new opportunities.

Business needs to be able to invest, create jobs and operate with surety that they will not be “crowded out” by changes to planning policies and agitation from new communities and incompatible land uses.

Good planning protects and reserves key freight corridors and freight facilities from this crowding effect now and into the future, including catering for future expansion. Some examples:

Adelaide Airport plays a vital role in connecting communities, facilitating business and moving high value and time sensitive freight to domestic and international markets. As such, the airport’s vital functioning, similar to other key freight infrastructure and precincts such as ports, depots and terminals, should be protected. Off Airport Planning should reference the National Airports Safeguarding Framework which should be embedded into local and state-wide planning regimes. The Framework covers aspects such as aircraft noise, windshear, lighting, birds and public safety zones by addressing land use planning adjacent to airports and aims to improve community amenity by minimising aircraft noise-sensitive developments near airports and improve safety outcomes by ensuring aviation safety requirements are recognised in local planning decisions.

Community agitation is squeezing freight operations on a variety of other freight corridors and strategic freight generation areas and, as is the case with Adelaide Airport, this agitation is often against pre-existing facilities and operations.

Portrush Road forms part of the national highway network and has performed this role for decades. It accommodates a mix of commuter and freight traffics and is a key heavy vehicle corridor for vehicles travelling to and from Victoria, the Murraylands, Mallee and South East areas to the port and rail terminals, north-west crescent warehouses and distribution centres and other processing facilities, as well as for vehicles travelling across the city to destinations beyond. Despite this significant role there are strong calls from local communities for the removal of heavy vehicles from the corridor, presumably in favour of moving the negative impacts to other “more deserving” communities.

Community agitation is not confined to the metropolitan areas. The State’s major grain handler, Viterro Australia has **strategic grain storage sites across the State. Viterro sites at Roseworthy, Kapunda, Wallaroo, Cummins** and elsewhere are being squeezed by new residential developments and community agitation against their operations, which are vital to our grain farmers and grain exports.

The Principle of Prior Use

Prior use is a principle that needs to be better recognised and better understood by local and State Government planners and the community at large.

Efficient freight infrastructure, facilities and systems should be viewed as a public good that benefits communities beyond those living nearby. Products are moved from farm to ports, from processing facilities to warehouses and from warehouses to supermarkets and homes. Freight networks that minimise operating costs assist us all to achieve our economic ambitions and reduce prices at the checkout and in our overseas markets.

We should facilitate the movement of freight for the broader public good, not agitate against it to offset local impacts or for private benefit. We should expect there will be consequences from living next to key freight networks and facilities and we should acknowledge that the industry and the broader community has a right to this “prior use” activity. Governments and Oppositions should not react to community agitation by making unrealistic promises to remove heavy vehicles from long used corridors, nor close or curtail activities at key facilities.

Protecting Freight Capability - A Public Asset (Continued)

Resilience and Corridor/Facility Protection

Our Freight network needs to work 24/7, 365 days a year – the system must be resilient enough to absorb rain or other events and keep delivering.

For example, an accident on a key piece of infrastructure such as the Swanport Bridge crossing the Murray River can result in costly detours and/or lengthy delays. Relatively minor rainfall events can close strategic infrastructure such as Yorkey's Crossing or the Strzelecki Track for extended periods.

The resilience of the freight network should be assessed to identify risks and develop mitigating strategies, thereby ensuring ongoing availability of the network for freight and community use.

As outlined above (Government Plans, Policies and Directions) SAFC calls on the State Government to work with industry and other key stakeholders to develop and release for public consumption a much needed 'Key Freight Corridors and Facilities Protection Strategy' and a 'Network Resilience Strategy' initially covering key freight corridors and precincts.



SAFC's Project Priorities

Through consultation and research SAFC has received infrastructure project suggestions and concepts from a broad cross section of individuals, companies, associations, communities and governments.

Not all projects put forward were freight related and not all projects have been assessed by SAFC as warranting entry into this infrastructure priorities document. Those that have will generate positive outcomes for a variety of users, including the freight and logistics industry and operators, if built in the right timeframes.

As with all policy statements, this document represents a cross section in time. New economic development opportunities will arise, be investigated and then proceed to implementation, whilst others will never come to fruition.

Projects have been categorised into 4 categories, namely:

- **Urgent Projects** that need to be planned and delivered within the next 5 years so as to deliver a lift to South Australia's competitive position and to ensure continued safe and efficient operations for the freight and logistics sector and other network users;
- **High Priority Projects** that need to be delivered in a 5-10 year period so as South Australia can maintain its competitive position;
- **Future Projects** that are expected to be required in the medium term – beyond a 10 year timeframe and will be necessary if the State is to continue to move forward and grow; and
- **Subject to Demand Projects** that will need to be implemented only if and when sufficient demand eventuates – such as a nearby mine being approved. Implementation could commence in the near term, given that the necessary demand exists and project approvals are in place. Equally, these projects may never be implemented if associated development projects do not proceed to production (indicative costs are not always provided due to the uncertain nature of the project that may proceed).

Only the Urgent Priority Projects have been ranked in order of priority



URGENT PRIORITY PROJECTS

Projects that need to be planned and delivered within the next 5 years to deliver a lift to South Australia's competitive position and to ensure continued safe and efficient operations for the freight and logistics sector and other network users.

Project	Description
<p>Upgrade of North-South Corridor</p> <p>\$5.4 billion to fund remaining elements</p> <p>80% of Funds to be provided by Commonwealth Government and 20% by the State Government</p>	<p>The North-South Corridor is defined as the 78km stretch of road running between Gawler and Old Noarlunga; and incorporates the Northern Expressway, Northern Connector (under construction), South Road and the Southern Expressway.</p> <p>The corridor represents the spine of the Adelaide transport network and is fundamental to the efficient movement of people and freight within, across and through the Adelaide metropolitan area. It carries freight of all kinds to/from facilities and warehouses, ports, airports and terminals as well as retail outlets and private homes – as well as catering for tens of thousands of private commuters each day.</p> <p>The North South Corridor remains the State's most significant freight related project. Progress to date has been slow overall but is now progressing reasonably well – although momentum may be lost if new projects are not approved soon. The Gallipoli Underpass, Glenelg Tram Overpass, Southern Expressway Duplication, Northern Expressway and South Rd Superway projects are complete. The Darlington, Torrens to Torrens and Northern Connector projects are underway.</p> <p>SAFC prefers that the project is accelerated and that the build continues from North to South (so as to capitalise on existing works and to provide earlier connectivity for major freight centres). The Regency Rd to Pym Street element has been funded by the State and Commonwealth. Works should then progress southwards from the Torrens River to Richmond Road, then Richmond Road to the Gallipoli Underpass and then Gallipoli Underpass to Darlington. A new Emerson Crossing, including separation of the rail network from Cross Rd, will be required if Cross Rd is to perform any future role as a key Heavy Vehicle corridor.</p>
<p>Eyre Peninsula Road Safety Upgrades</p> <p>\$32m</p> <p>Commonwealth / State Joint project.</p>	<p>The Eyre Peninsula rail network was an isolated narrow gauge system operated by GWA connecting 15 Strategic Grain complexes on the Eyre Peninsula (Viterra Australia) to Port Lincoln where grain was loaded for export. Due to cost, maintenance and risk pressures, as well as the opening of new ports that would reduce grain movements on the network, a decision was taken by Viterra to cease using the rail system from the 2019 harvest season. Approximately 750,000 tonnes of grain moved on the rail on an average year.</p> <p>The cessation of the movement of grain by rail will have an immediate safety impact on Eyre Peninsula roads, with approximately 30,000 additional truck trips required in an average year. This represents 30,000 additional sets of interactions with motorists, and 30,000 additional opportunities for a fatal collision.</p> <p>continued over...</p>

Urgent Projects (Continued)

Project	Description
<p>Eyre Peninsula Road Safety Upgrades</p>	<p>Eyre Peninsula roads, particularly those leading to the primary grain port at Port Lincoln, need an urgent safety upgrade to accommodate the additional truck trips required to move the grain harvest.</p> <p>The Commonwealth and State have committed some funding to this need, but major expenditure is not expected to begin until at least 2022/23. This funding needs to be deployed faster to ensure road safety on the Eyre Peninsula is not compromised.</p>
<p>Accelerated Maintenance Regime</p> <p>Up to \$800m required over time to relieve backlog</p> <p>Funds to be provided principally by the State and Commonwealth Governments, as well as Local Government.</p>	<p>Poorly maintained roads increase vehicle operating costs, discourage business investment, reduce safety, reduce ride quality and user satisfaction and can increase total maintenance costs over the longer term. A 2016 State of the Asset report prepared by the Australian Local Government Association found that 11% of sealed roads, 19% of unsealed roads and 22% of timber bridges were “physically unsound” or requiring significant rehabilitation.</p> <p>State road maintenance funding has declined recently, from \$136m in 2017/18, to \$129m in 18/19, to just \$110m in 19/20.</p> <p>There are many examples of roads requiring Urgent attention, with some examples including the Horrocks Highway and the Tod Highway which are mixed use roads (especially for farmers and tourists). Activity at Osborne Wharf 4 at Port Adelaide is increasing and coupled with increased shipbuilding and related road traffic nearby means that an increase in maintenance efforts is required for Veitch Road and Mersey Rd. Sections of the Lincoln Hwy south of Rudall are poor, especially near Tumby Bay and the Green Triangle Freight Action Plan Update has identified significant Maintenance and Upgrade requirements. This is not a comprehensive list – many more areas are in need of action and communities and truck operators report poorly maintained roads on an ongoing basis.</p>



Urgent Projects (Continued)

Project	Description
<p>Airport East Precinct Freight Development</p> <p>Cost depends upon actual development.</p> <p>Funds to be provided by Adelaide Airport Limited and/or potential tenants.</p>	<p>Development of the Airport East Precinct forms part of the Adelaide Airport Master Plan (2014), and is expected to become an increasingly key component of the 2019 Master Plan (Under Development).</p> <p>In order to segregate landside freight from passenger terminals and associated road access, future air freight cargo facilities at Adelaide Airport will be progressively relocated from the Terminals and Aviation Policy Area, within the Terminals and Business Precinct, and directed to airside facing sites within the Airport East Precinct. This area can accommodate aircraft maintenance facilities, aircraft hangars, and ancillary aviation-support activities such as avionics/equipment maintenance and air freight and represents an opportunity to upgrade some infrastructure to newer technologies (eg: the On-Airport Cold Store).</p> <p>The Airport East Precinct presents a logical expansion to the adjoining off-airport industrial, warehouse, distribution and logistics operations and general transport related uses and will provide for uses that have a relationship to the airport or would benefit from an airport location. In addition to the landscaped buffers proposed, development with minimal impacts will be located to also act as a buffer to nearby residential areas to the north, east and south of the precinct.</p> <p>Demand is increasing and broad development may commence in the near term.</p>
<p>Airport Connector - Richmond Rd (access to Airport East Precinct) & Transport Avenue</p> <p>Richmond Rd / South Rd intersection forms part of North-South Corridor Project (see above). State (20%) and Commonwealth (80%) Government to fund.</p>	<p>Richmond Road leads into the Airport East Precinct and has been jointly assessed for suitability as a B-Double Freight Route providing the necessary high productivity vehicle access to the area.</p> <p>The State Government will need to assume responsibility for the full Richmond Rd corridor to facilitate any necessary upgrades as the precinct is developed. This is appropriate as the route becomes a major state export gateway.</p> <p>Transport Avenue should also be added to the B-Double network to facilitate Heavy Vehicle access to and from the area. Failure to do so is unlikely to stop the project, but will increase the number of trucks required – meaning greater impacts on residents and higher transport costs for business.</p> <p>A new on-airport road link to the terminals area would also be required for this proposal to proceed.</p>

Urgent Projects (Continued)

Project	Description
<p>Horrocks Hwy (Main North Rd)</p> <p>\$126-130m estimated by RAA.</p> <p>\$55m committed by State (20%) and Commonwealth (80%) Governments</p>	<p>The Horrocks Highway corridor passes through grain, livestock and grape/wine producing areas such as Roseworthy, Auburn and Clare. The Barrier Highway leading to Broken Hill and New South Wales joins Horrocks Highway at Giles Corner north of Tarlee. A significant volume of tourists also use this key route.</p> <p>Horrocks Hwy road represents a priority safety upgrade, especially the portion of the road between Roseworthy and Clare, which was identified as the second riskiest road in the state by respondents to the RAA's Risky Roads survey. Roseworthy is a strategic site for grain aggregation and is increasingly seeing more efficient heavy vehicles moving on the corridor. The road has been described as having uneven surfaces, potholes and narrow lanes.</p> <p>Works required include construction of a minimum of 4 new overtaking lanes, repairs and full width resealing to remove failed sections of the road, and the installation of road barriers to protect drivers from roadside hazards and installation of audio tactile line marking to reduce run-off-road accident risks.</p> <p>While \$55m has been committed by the State and Commonwealth Governments to improvements on this road, most funding is outside the forward estimates and will not be complete until 2025/26. This needs to be brought forward.</p>
<p>Upgrade of Highway 1 - Port Wakefield to Port Augusta (TRT Capability)</p> <p>80% Commonwealth & 20% State Government Responsibility</p>	<p>The safe introduction of PBS 4 vehicles and Triple Road Trains south of Port Augusta to a point somewhere near to the north of Adelaide would offer massive freight productivity gains to communities, businesses, mines and farms in the north of the state.</p> <p>This corridor passes through the highly productive livestock and cereal farming regions of the Mid-North as well as providing a vital link for other industry sectors and communities involved in mining, tourism, engineering, alternative energy industries, fishing and aquaculture and the like.</p> <p>Massive growth is predicted for several regional centres in the area, with some predictions indicating that Whyalla could grow from 20,000 residents to 80,000 residents over the coming decade. Mining activity is greatly increasing – both through new projects and expansion of capacity at existing mines (such as the CU River mine at Cairn Hill).</p> <p>The southern section of Highway 1 from Adelaide to Pt Wakefield is already duplicated. Industry understands that only relatively minor upgrades are needed north of Pt Wakefield to bring the corridor up to PBS4/TRT standard – lengthening of overtaking lanes, strengthening of some culverts etc. A breakdown facility would be required at the termination point north of Adelaide, to facilitate splitting triple road trains down into smaller combinations for transit to various facilities in Adelaide – ports, warehouses and trucking facilities.</p>

Urgent Projects (Continued)

Project	Description
<p>Rail Level Crossing Grade Separation Program</p> <p>Costs to be investigated through the 20 Year State Infrastructure Strategy</p> <p>State / Commonwealth Government and potentially ARTC funding</p>	<p>Where freight rail lines intersect with the road network ‘at grade’ (at the same vertical level) a level crossing is required. Freight trains can be up to 1800m (1.8 kilometres) long, and often need to move slowly through metropolitan areas; which results in (sometimes very) long wait times for motorists and increased congestion. There are also significant safety risks for both cars and pedestrians/cyclists – when safety incidents occur at level crossings they are often horrific.</p> <p>Grade separation solves these problems by separating rail and road traffic, and has particularly positive effects on improving the flow of road traffic. The Victorian Government is in the midst of a multi-billion dollar grade separation program in Melbourne, which is delivering impressive results for their network.</p> <p>There are several freight rail crossings within the metro region that should be grade separated, including on Cross Road (Kings Park), Torrens Road (Renown Park), Park Terrace (Salisbury), Cormack Road (Dry Creek) and Kings Road (Salisbury Downs).</p>
<p>Widening Outer Harbor Shipping Channel</p> <p>Estimated cost of \$80m with completion winter 2019</p> <p>Funds to be provided by Flinders Ports (and recouped through port related charges)</p>	<p>The Flinders Adelaide Container Terminal (FACT) at Port Adelaide is the State’s only container shipping terminal and is critical in facilitating the cost effective movement of the State’s imports and exports.</p> <p>The terminal has experienced rapid growth in throughput for more than a decade, and this growth is expected to continue into the foreseeable future. 80% of vessels calling at FACT (and Australia more generally) are now the bigger Post-Panamax size and are currently becoming wider (and in some cases longer) rather than deeper. Restrictions regarding channel width and swinging basin draft currently result in regular delays in sailing from Adelaide. As a small container port, Adelaide will be removed from shipping schedules if the channel is not rapidly upgraded to meet shipping requirements.</p> <p>Project aims to widen sections of the 12km main channel from 130 to 170 metres, taking the “edges off” some of the bends in the channel and widening the swing basin off Berth OH6 from 505 metres to 525 metres. This project is currently under development.</p>



HIGH PRIORITY PROJECTS

Projects that need to be delivered in a 5-10 year period so as South Australia can maintain its competitive position.

Project	Description
<p>Riddoch Highway Upgrade</p> <p>Cost depends upon the number and type of upgrades (overtaking lanes and rest areas) implemented.</p> <p>State Government Responsibility (potential Commonwealth Govt contribution due to cross border function of the road).</p>	<p>The Riddoch Highway in the south-east of the State branches from the Dukes Highway (linking Adelaide and Melbourne) at Keith and travels south through Padthaway, Naracoorte, Penola, Nangwarry, Tarpeena, to Mount Gambier. The highway passes through grazing and cereal-growing areas, vineyards (Padthaway, Wrattenbully, Coonawarra and Mount Gambier) and other horticultural areas (eg: potatoes), and large tracts of plantation timber (pine and blue gums). The highway also links to Victoria for tourist traffic, dairy and livestock movements, as well as woodchips moving to the port at Portland.</p> <p>A full duplication of the corridor is not warranted for the foreseeable future due to traffic volumes, but some upgrade is warranted at various heavily trafficked sections/points.</p> <p>Average Annual Daily Traffic (AADT) Volumes include 650 trucks per day (16% of all traffic) near Mt Gambier, around 500 (16%) near Penola and Coonawarra, rising to 700 (16%) near Naracoorte and 250 (19%) near Keith, reflecting the variety of origins and destinations for south-east freight, including movements to and from Adelaide and Melbourne; as well as within the region.</p> <p>The Green Triangle Region Freight Action Plan (Update) assessed the impacts that the growing timber industry is having on the region and found that Overtaking Lanes and Rest Areas are required on the Riddoch and Princes Highways in the lower South East.</p>
<p>Duplication of Highway 1 - Port Wakefield to Port Augusta</p> <p>80% Commonwealth & 20% State Government Responsibility</p>	<p>The Highway 1 Duplication (Pt Wakefield to Pt Augusta) project incorporates duplication of 209km of the Princes Highway (Highway 1) travelling between Pt Wakefield (near the top of St Vincent Gulf and the main access point to the lower Yorke Peninsula and Copper Triangle towns) and Pt Augusta (at the top of Spencer Gulf where the top of the eastern Eyre Peninsula meets the Far North and West of the State). The corridor forms a key component of interstate movements to and from West Australia and Perth, the Northern Territory and Darwin and New South Wales and Sydney (via Crystal Brook and the Barrier Hwy towards Broken Hill).</p> <p>This corridor passes through the highly productive livestock and cereal farming regions of the Mid-North as well as providing a vital link for other industry sectors and communities involved in mining, tourism, engineering, alternative energy industries, fishing and aquaculture and the like.</p> <p>Massive growth is predicted for several regional centres in the area, with some predictions indicating that Whyalla could grow from 20,000 residents to 80,000 residents over the coming decade. Mining activity is greatly increasing – both through new projects and expansion of capacity at existing mines (such as the CU River mine at Cairn Hill).</p> <p><i>continued over...</i></p>

High Priority Projects (Continued)

Project	Description
<p>Duplication of Highway 1 - Port Wakefield to Port Augusta</p>	<p>Duplication of this route will facilitate the continued safe use of PBS 4 vehicles and Triple Road Trains south of Port Augusta (as envisaged in the 'Upgrade to Highway 1' project in the urgent category).</p> <p>While this project is included under the 'High' Category, it is also possible that Governments could skip the 'Upgrade to Highway 1' project entirely and move straight to duplication. In that instance, work on this project would need to commence inside the next 5 years.</p>
<p>Tarcoola to WA Border (and onwards towards Kalgoorlie) Rerailing</p> <p>\$600m estimated</p> <p>ARTC / Commonwealth Government funding</p>	<p>The Tarcoola to WA Border railway is part of the interstate standard gauge mainline rail network operated by the Australian Rail Track Corporation (ARTC) that connects the nation's mainland capitals, and is a key element of the Melbourne to Perth section of track (which passes through Adelaide). The Tarcoola to Darwin railway operated by Genesee and Wyoming Australia joins the Interstate Mainline at Tarcoola.</p> <p>The Adelaide to Tarcoola Rerailing Project was brought forward by the Commonwealth Government as part of an assistance package for the troubled Arrium Steelworks at Whyalla. The project is underway and is due for completion in 2019.</p> <p>Progression of the project beyond Tarcoola to the West Australian border and onwards to Kalgoorlie will further support the Whyalla Steelworks (supplying rail to the project), enable workforce retention, and capitalises on the existing investment already underway.</p> <p>The mining industry is expected to be the major beneficiary of increased axle loads to 25 tonnes (increasing capacity, lowering transport costs per unit).</p>



High Priority Projects

(Continued)

Project	Description Shared funding possible.
<p>Sturt Highway Stage 1 Duplication: Greenock to Truro and Barmera to Paringa</p> <p>\$1.2 billion (est) incl \$300 million Renmark Bypass and Paringa Bridge replacement.</p> <p>State (20%), Commonwealth (80%) Government</p>	<p>The Sturt Highway forms part of the national highway network and is the principal road link running from Gawler through the Murray Mallee and Riverland to the Victorian border (and beyond into New South Wales). It is an important road link for tourists, commuters and freight of all kinds running between Adelaide, the Barossa Valley and Riverland in SA, and Sunraysia areas (in Victoria and NSW), broader New South Wales and Sydney (road joins Hume Highway connecting Melbourne and Sydney near Tarcutta) and places in between. The corridor also supports movements to and from Queensland and Brisbane.</p> <p>The \$160m Sturt Highway Upgrade Project completed in 2010 included duplication between Gawler and Nuriootpa to improve safety for all road users, freight efficiency, and national and inter regional links. The duplication project now proposes to continue on from previous duplication efforts that end at Greenock and includes a bypass of Truro and duplication of the highway section running from Barmera to Paringa. The 1920's Paringa Bridge in the Riverland is very narrow and unacceptably reduces speed on a national highway to 30km per hour, impeding interstate and interregional trade, and should be replaced. A new crossing of the River could form part of the proposed Renmark Bypass. AADT counts vary from around 3700 vehicles per day(vpd) near Blanchetown (950 Heavy Vehicles) to 7100 vpd (1100 trucks) near Barmera and 10,400 vpd (1100 trucks) in Renmark.</p> <p>A welcome \$24.86 million Sturt Highway Productivity and Safety Improvements project is currently underway (including upgrade of Kingston on Murray bridge to accommodate high productivity heavy vehicles). Two new overtaking lanes at Annadale and Kingston on Murray are being constructed, while also extending overtaking lanes at Stockwell, Renmark and Lyrup. Heavy Vehicle Access on the Sturt Highway has improved significantly recently (PBS 3A vehicles to SA/Vic Border (via Loxton whilst bridge at Kingston on Murray is upgraded).</p>
<p>Port Adelaide Access Improvements: Coghlan Rd Upgrade</p> <p>Costs to be investigated through the 20 Year State Infrastructure Strategy but expected to be relatively minor.</p> <p>Coghlan Rd upgrade is a State Government responsibility.</p> <p>Truck Marshalling Facility cost will depend upon land acquisition.</p>	<p>Coghlan Rd is the final road on the corridor leading to and from SA's only container terminal receiving regular scheduled international shipping. The current throughput of Outer Harbor Container Terminal operated by Flinders Adelaide Container Terminal (FACT) is around 400,000 twenty foot equivalent units (teu - containers) per annum and has grown rapidly in recent years. Recent expansion of the terminal has seen 2 new post-panamax cranes installed along with new hard stand areas. Further expansion of the terminal and shipping channel to ensure that it can continue to receive the vessels calling to Australia is being progressed and is expected to result in a continuation of the impressive growth in throughput. Coghlan Road also leads to wine warehousing and a rail terminal located beyond the Container Terminal gate.</p> <p><i>continued over...</i></p>

High Priority Projects (Continued)

Project	Description
<p>Port Adelaide Access Improvements: Coghlan Rd Upgrade</p>	<p>There are two alternative solutions available to improve operations:</p> <p>1) Upgrade existing road through widening to Outer Harbor Terminal gates, which has safety issues associated with exiting the Terminal (line of sight blocked by waiting trucks and crossing in front of Heavy Vehicles travelling to / from wine warehouse and / or QUBE's empty park.</p> <p>2) Repair and improve the maintenance regime on Coghlan Rd AND develop a truck marshalling area nearby where trucks can wait to be called to take up their slot in the terminal. This would remove queued trucks from Coghlan Rd.</p> <p>FACT also expects some reduction in congestion on Coghlan Rd if they relocate their empty container park (currently within the terminal itself) to the other side of Coghlan Rd where it will then be accessed from Pelican Point Rd.</p>
<p>Yorkey's Crossing (near Pt Augusta)</p> <p>Cost estimated at \$50 - \$60m to seal. A cheaper solution aimed at improving resilience is possible.</p> <p>State and Local Government funding responsibility, with scope for a Commonwealth contribution</p>	<p>Yorkey's Crossing is a 27.5km strategic road that bypasses the city of Port Augusta at the top of Spencer Gulf and forms a critical corridor for the movement of over dimensional cargoes (>4 metres wide and/or 5.8 metres high) to a variety of current and future mining ventures, agricultural pursuits and a raft of existing and proposed energy / electricity generation projects in advanced stages of planning.</p> <p>The corridor is unsealed and a relatively small amount of rain (as little as 3mm) is reported to be sufficient to make the road impassable and lead to closure and delay for critical freight movements.</p> <p>The use of Yorkey's Crossing is expected to increase as new mining ventures in the North and West of the State progress towards production and expansion. Over dimensional freight might also include turbines associated with new windfarm developments in the region, Pumped Hydro projects and general equipment movements associated with the ongoing expansion of Olympic Dam (BHP - \$600m project underway), Carapateena (OzMinerals), and the Cultana training grounds (Australian Army requiring movement of tanks etc).</p> <p>Whilst sealing the corridor is the preferred outcome, industry simply requires a reliable, all-weather freight corridor. A cheaper upgrade to improve the corridor's overall resilience could also be implemented if confirmed as preferable by cost benefit analysis.</p>

High Priority Projects

(Continued)

Project	Description
<p>New Port - Kangaroo Island - Smith Bay</p> <p>\$25-\$30m Private Sector proponents (KIPT)</p> <p>Local road network may require State & Local Government contributions.</p>	<p>There have been significant Blue gum plantings on Kangaroo Island in recent decades and Kangaroo Island Plantation Timbers (KIPT) expects to harvest about 500,000 tonnes of timber and woodchip a year, valued at about \$60 million.</p> <p>A new port at Smith Bay is proposed by KIPT to handle timber plantations under their control (as well as other potential users including grain exports and passenger vessels).</p> <p>Project has been declared a Major Project by the State Government. Existing tree farm plantings will provide initial volumes but it is unclear whether any additional plantings will be made or other commodities/potential throughput has committed to use the facility. There will be some impact on roads leading to and from the proposed port (see separate entry).</p> <p>KIPT has purchased a pontoon barge to form the floating berth of its proposed Smith Bay deep-water wharf. Project can be put in place in 9 months after final approvals.</p>
<p>Kangaroo Island Timber Industry Road Network</p> <p>Estimated Cost \$3m Private Sector proponents / Local / State Government</p>	<p>A new port at Smith Bay is proposed by KIPT (see above), which will place some pressure on the local road network.</p> <p>A November 2017 Study has identified a preferred network (in consultation with KI Council) involving parts of the Playford Highway, Stokes Bay Rd, Bark Hut Rd, McBrides Rd, North Coast Rd to Smith Bay.</p> <p>An indicative upgrade cost of \$3m was concluded, with additional Annual Maintenance requirements of \$233,000 pa. B-Double vehicles are envisaged at this time (although larger Double Road Train vehicles would be beneficial to the company).</p>



Case Study: A Port at the end of every street?

Wherever you look there seems to be a proposal for a new or expanded port to service existing and emerging ventures, big and small. Some new port proposals are large and may justify port investments in their own right. Others have access to relatively small volumes of cargo and are unlikely to proceed without significant complimentary volumes being identified. Just a few of the known new and expanded port proposals include:

- **Thevenard** – expansion and channel deepening to facilitate minerals exports. Port currently handles salt, grain, gypsum and mineral sands;
- **Cape Hardy** – new port located north of Port Neill (eastern Eyre Peninsula) planning to serve Iron Road's Central Eyre Iron Project (near Warrambo). Elements of the grain industry have also shown some interest in using this port;
- **Whyalla** – existing indentured port (Arrium) handling ores (barge and transshipment) with potential to accommodate 3rd Party cargoes, operators and service providers;
- **Port Bonython** - an established deep water port servicing the oil and gas industry, and proposing new storage and loading facilities for iron ore mined across Eyre Peninsula and the Far North;
- **Port Augusta** - a constrained port in terms of depth, however a barge and transshipment proposal is being developed by CU River Mining;
- **Port Pirie** – an existing port at the top of Spencer Gulf that could handle iron ore originating from the Braemar region and / or north of the State;
- **Myponie Point** – a new port proposal located a few kilometres north of Wallaroo on the western side of Spencer Gulf aiming to service the Braemar iron ore ventures (includes a slurry pipeline and dewatering at sea prior to loading direct to large vessels); and
- **Smith Bay, Kangaroo Island** – a new barge and transshipment facility aimed at woodchip and grain exports.

Whichever port(s) proposals proceed is for industry to determine in consultation with government and broader industry sectors. All proposals except Smith Bay are **Subject to Demand** (see below) and rely upon specific ventures proceeding (or otherwise).

*However, taken as a whole, the need for expansion of regional port capacities to service the growing mining and agricultural sectors is **High**.*

A key policy consideration for Government and industry is the need to ensure that a balance is struck between protecting an investor's rights to access his own infrastructure investment, and the desire to ensure access by third parties to common user facilities and equipment to **mitigate against unnecessary duplication** and to facilitate further development of other mining and related ventures.

This 3rd party access could lower unit costs for all potential customers and provide some surety to prospective miners.

Case Study: A Future Problem - Linking the North South Corridor and the South Eastern Freeway

The South Eastern Freeway is the final link between Melbourne and Adelaide, and is traversed by some 50,000 vehicles per day – a broad mix of heavy road freight, busses, smaller trucks and passenger vehicles. It provides a critical link between South Australia's export producing regions and Adelaide; and its importance to the South Australian economy cannot be overstated.

The final descending sections of the South East freeway are steep, and are an ongoing risk to safety – particularly when trucks lose breaking capacity due to overheating. Several major crashes have occurred at the base of the Freeway, including loss of life. Due to the safety risks of descending the final steep sections, speeds for heavy vehicles have been reduced down to a maximum 60 km/hr (with many voluntarily travelling at much lower speeds).

The majority of heavy road freight vehicles that descend the freeway travel to two destinations – the Flinders Adelaide Container Terminal (Outer Harbor – Port Adelaide) for export, and to the large trucking, warehousing and distribution centre precincts in the northern suburbs. In order to access these areas trucks generally use Portrush Road, which causes conflict with other road users and considerable community angst.

The North South Corridor, once complete, will provide a high speed (80 – 90km/hr), high capacity route from the south to these major freight destinations. **Freight (and passenger vehicles) will naturally move from the current route along Portrush Road to this corridor, which in the absence of another solution will move current issues from Portrush Road onto Cross Road.**

Clearly connectivity between the South Eastern Freeway and the North South Corridor will need to be addressed once the Corridor is complete. Planning for this should begin now to determine the preferred outcome.

Therefore there are two possible solutions to this issue:

- **Building a 'South East Link'** – a new road, substantially tunnel based, linking the freeway and North South Corridor; or
- **Major upgrades to Cross Road** – likely involving grade separation of all major intersections and rail crossings.

Further discussion of both options appears on the following pages. Both potential solutions will come at major cost, although the SE Link would likely result in less disruption to the network.

As a neutral specialist agency, ISA is perfectly placed to undertake a study to determine which option would have the best Benefit Cost Ratio (BCR) for SA. ISA should self-refer this task, as allowed under its enabling legislation.



FUTURE PROJECTS

Projects that are expected to be delivered in the medium term – beyond a 10 year time frame and will be necessary if the State is to continue to move forward and grow (indicative costs have generally not been included as it is impossible to accurately cost projects this far into the future).

Project	Description
<p>South East Link (between SE Freeway and North South Corridor)</p> <p>Costs to be investigated through the 20 Year State Infrastructure Strategy.</p> <p>80% Commonwealth & 20% State Government Responsibility</p> <p><i>Not required if 'Major Upgrades to Cross Road' Project undertaken instead (see below)</i></p>	<p>One possibility for improving connectivity between the North South Corridor and South East Freeway is a 'South East Link' – a new road commencing from approximately where the lower truck arrester bed exists on the Freeway, following the alignment of the foothills and Brownhill Creek and continuing along approximately the current alignment of Springbank Road and Daws Road to connect to the North South Corridor at Melrose Park. This alignment minimises the impact on existing residential property and businesses, and would result in a gradient of approximately 2.5%. A combination of both tunnels and surface road would be required. Other alignments may be possible – further investigations are required.</p> <p>SAFC notes that the State Government is currently investigating tunnelling options for the remaining sections of the North South Corridor. If this was to go ahead, (and in particular if the NS Corridor is built from north to south as SAFC proposes) tunnelling costs for the South East Link could potentially be substantially reduced by moving directly from one project to the next – eliminating the substantial relocation costs for tunnel bore machines.</p> <p>SAFC further notes that this project addresses two of the major concerns that prompted the Globelink project – heavy freight on Portrush road and safety at the base of the South East Freeway. This new option addresses both while also providing benefits for the freight industry – a win industry, residents and commuters.</p>



One potential alignment of a 'South East Link' road.

Future Projects (Continued)

Project	Description
<p>Major Upgrade – Cross Road</p> <p>Costs to be investigated through the 20 Year State Infrastructure Strategy.</p> <p>80% Commonwealth & 20% State Government Responsibility</p> <p><i>Not required if ‘SE Link’ Project undertaken instead (see above)</i></p>	<p>As an alternative to the ‘South East Link’ proposed above, Governments could instead embark upon a major upgrade program to Cross Road.</p> <p>At minimum this would require full grade separation of all major intersections and rail lines on the road, all at major cost.</p> <p>It would not address safety concerns with trucks on the down track of the SE Freeway, and would involve major disruption to local businesses, schools and residents during the multi-year construction (as has been seen with similar scale works on the North South Corridor).</p> <p>However, it could be cheaper, and therefore has the possibility of delivering a higher Benefit Cost Ratio (BCR). Thus, it should be investigated.</p>
<p>Double Stack Capability - Adelaide – Melbourne</p> <p>ARTC responsibility, with State Governments responsible for some blocking infrastructure</p>	<p>The Adelaide to Melbourne rail track forms part of the Melbourne to Perth section of the national interstate mainline standard gauge track and carries passenger trains and freight trains carrying containerised and bulk freight (grain, steel, shipping containers etc) between the 2 capitals and places in between (eg: Tailem Bend, Bordertown), as well as beyond (Perth, Darwin).</p> <p>Double Stacking of containerised freight on the Adelaide - Melbourne line is a long term goal that will deliver improved productivity and efficiency benefits.</p> <p>It should be noted that additional works will be required on the Victorian side of the border if double stacking of containers is to be achieved, and following recent upgrades (new and extended Crossing Loops have facilitated access by 1800m trains which represents a 20% increase in capacity), and planned improvements (additional Crossing Loop enhancements (eg: Belair) and the introduction of the Advanced Train Management System (ATMS)), this line will have sufficient capacity to cater for demand for an estimated 30 plus years.</p> <p>Nonetheless, while a major push for double stack capability is not currently required, the capability should be built in to all upgrades along the corridor (as was done for the Bakewell Underpass project). The establishment of any new intermodal terminal(s) in Melbourne (associated with the Inland Rail project) should also alleviate some of the constraints on double stacking in Melbourne itself.</p>



Future Projects (Continued)

Project	Description
<p>Sturt Highway Stage 2 - Duplication Truro to Barmera and Paringa to Vic Border)</p> <p>80% Commonwealth & 20% State Government Responsibility</p> <p>See Sturt Highway Stage 1 in High Priority Projects category</p>	<p>Stage 2 Project includes the Truro - Barmera and Paringa - Victorian Border sections only. Stage 1 elements of the corridor appear as a High Priority project. The Truro to Barmera section passes through towns such as Blanchetown, Waikerie and Kingston on Murray. The Paringa to Victorian Border element provides links to Mildura and on into New South Wales.</p> <p>A 2010 \$160m Upgrade of the Sturt Highway included duplication between Gawler and Nuriootpa to improve safety, freight efficiency, and national and inter regional links. This Stage 2 duplication project proposes to link previous duplication efforts (see Stage 1 listed under High Priority Project) proposed to end at Truro, to Barmera, where the Stage 1 Duplication project recommences and again ends at Paringa (including a Renmark Bypass and Paringa Bridge replacement).</p> <p>AADT counts vary from around 1100 heavy vehicles per day (vpd) near Truro (26% of all traffic at that point on the corridor) Blanchetown (950 Heavy Vehicles) to 7100 vpd (1100 trucks) near Barmera and 10,400 vpd (1100 trucks) in Renmark. Truck numbers and overall traffic decline east of Renmark with around 650 - 750 trucks using the highway each day representing around 36% of all traffic.</p>
<p>Swanport Bridge Duplication</p> <p>80% Commonwealth & 20% State Government Responsibility</p>	<p>Swanport Bridge is a one-kilometre-long 2 lane (1 lane in each direction) bridge crossing the Murray River near Murray Bridge. The bridge forms a choke point on the South Eastern Freeway which has 4 lanes (2 lanes heading in each direction) adjacent either side. It represents a significant constraint on the national highway network and is speed limited to 80kmh following recent serious crashes. The bridge currently caters for between 1650 (Tailem Bend side of the bridge) and 1800 (on the Adelaide side of the bridge) Heavy Vehicles per day representing between 16 and 20% of all traffic.</p> <p>Any incident on the bridge leads to lengthy closure, and as such duplication is also a resilience issue.</p> <p>The bridge is already catering for significant volumes of traffic and as traffic volumes increase duplication will be necessary.</p>



Future Projects (Continued)

Project	Description
<p>Dukes Highway Duplication</p> <p>80% Commonwealth & 20% State Government Responsibility</p>	<p>The Dukes Highway (A8) forms part of the national highway linking Adelaide and Melbourne. The 191 km road starts at the end of the South Eastern Freeway at Tailem Bend and extends southeast through regional centres such as Coonalpyn, Tintinara, Keith, and Bordertown to the State Border where the highway continues in Victoria as the Western Highway (443 km).</p> <p>The highway passes through livestock and grain farming areas and is adjacent to some significant mining ventures and opportunities. The corridor carries large numbers of tourists and provides a crucial link for regional communities and 2-way freight for key producing areas in the State's South East (Riddoch Hwy at Keith, Naracoorte Rd at Bordertown, Princes Hwy near Tailem Bend), and the Murray Mallee region (Mallee Highway near Tailem Bend, Ngarkat Hwy near Bordertown).</p> <p>Significant upgrades have occurred recently including a \$100 million safety program- reconstruction, widening, shoulder sealing, rest area upgrades, overtaking lanes and other safety measures (vegetation clearance, audio-tactile markers and centreline barriers). Significant duplication works (Ballarat to Stawell) have commenced on the Victorian side of the border.</p> <p>As traffic volumes increase, duplication of the Dukes Highway will become necessary. The Tailem Bend to Keith section should be the initial priority due to traffic loadings from the South East of the State. Average Annual Daily Traffic (AADT) Volumes include between 900 trucks per day near the SA/Victorian border(37.5% of total traffic volumes) and increase closer to Adelaide, rising to 1400 trucks per day near Keith, 1500 trucks per day near Tailem Bend and 1650 near Murray Bridge (20.5% of total traffic volumes reflecting the greater numbers of other vehicles, especially passenger cars as the road gets closer to Adelaide).</p>
<p>Mallee Hwy (Tailem Bend to Pinnaroo)</p> <p>State Government Responsibility</p>	<p>The Mallee Highway runs east from Tailem Bend through grain, livestock and horticultural farming areas in the Murray Mallee to Pinnaroo and the Victorian border.</p> <p>Following the closure of the Mallee Rail Lines used to cart grain to Tailem Bend and on to Port Adelaide for export, and so as to ensure ongoing viability for grain farmers in the region, larger High Productivity Heavy Vehicles were granted access to the Mallee Highway to satisfy the growing demand for road freight. 30m Short Road Trains now access the corridor and are reportedly working well. Nonetheless, expanded access for more efficient 36m Road Trains and similar vehicles (PBS 3 Vehicles) would be beneficial for local farmers.</p> <p>New Passing Lanes and other safety measures will be necessary to accommodate expanded access for these High Productivity Vehicles.</p>

Subject to Demand Projects

SUBJECT TO DEMAND PROJECTS

Projects that will need to be implemented only if and when sufficient demand eventuates – such as a nearby mine being approved. Implementation could commence in the near term, given that the necessary demand exists and project approvals are in place. Equally, these projects may never be implemented if associated development projects do not proceed to production (indicative costs are not always provided due to the uncertain nature of the project that may proceed)

Project	Description
<p>Sealing the Strzelecki Track</p> <p>\$450m</p> <p>80% Commonwealth & 20% State Government Responsibility. A private sector contribution may also be required.</p>	<p>The Strzelecki Track is a 475 kilometre mostly unsealed road (with some short sealed sections to facilitate overtaking), linking Innamincka in the far north east corner of the State near the Queensland border to Lyndhurst on the Outback Highway above Leigh Creek. The road passes through relatively lightly stocked pastoral country and is navigable during dry periods (caution is required) but quickly becomes impassable in the event of any major (and sometimes minor) rainfall events.</p> <p>This road is very lightly trafficked (60 vehicles per day Annual Average Daily Traffic of which around half (31) are Heavy Vehicles) but leads to the State's Far North including to Moomba and beyond into Queensland where there are significant existing oil and gas fields and great potential for further development, particularly in the Unconventional Gas Industry, but also for other mining ventures.</p> <p>In the event that any major projects proceed then the freight demand (especially for inputs to the process such as drill rigs and fracking sand) will be large and will expand quickly. The project is also on Infrastructure Australia's Priority Project List.</p> <p>A broader review of the potential beneficiaries reveal that the Project will also deliver significant benefits for the livestock industry - facilitating the movement of livestock from the Far North pastoral districts as well as from South West Queensland towards processing facilities at Murray Bridge. The tourism sector will also benefit from improved all - weather access.</p>

Subject to Demand Projects

(Continued)

Project	Description
<p>Northern Connector Rail Element</p> <p>Cost \$unknown at this time</p> <p>ARTC responsible for Mainline Rail</p>	<p>Rail freight entering Adelaide from the north reaches Virginia where it veers eastwards towards Salisbury, before turning south west towards Dry Creek and onwards through the suburbs; or westerly towards Port Adelaide on the Dry Creek corridor.</p> <p>Freight carried includes containerised intermodal freight of all kinds (and including freight loaded at the Bowmans Intermodal Terminal and SCT's Penfield facility), grain from the Mid-North area, steel and bulk minerals (some containerised). Interstate passenger services (The Ghan and the Indian Pacific) travel on the corridor and from Salisbury the rail corridor is shared with metropolitan passenger services and has also been shared by trains to/from the Barossa Valley in the past.</p> <p>The rail project was originally proposed as part of the Northern Connector road and rail project and proposed to divert freight rail from the jointly used Salisbury rail corridor through a new track originating in the Virginia / Penfield area leading towards Dry Creek and Port Adelaide where the Northern Connector road element is currently being built.</p> <p>No commitment has been made to the rail element of the concept but the rail corridor has been reserved. The project should be reassessed when large capacity rail to Port Adelaide emerges. Other benefits that accrue to other users of the network such as level crossing removal safety benefits may warrant earlier investigation. Project would also deliver significant benefits to any Transit Oriented Developments (TODs) touted for construction near or along the Salisbury rail corridor.</p>



Subject to Demand Projects (Continued)

Project	Description
<p>Pt Augusta Triangle ARTC Responsibility</p>	<p>The standard gauge Interstate Mainline rail track runs northwards from Adelaide to Port Augusta where it branches westwards towards Western Australia and the Northern Territory. The standard gauge branch line leading to/from the Whyalla Steelworks and the bulk export facilities at Whyalla originates in Port Augusta from the Spencer Junction Railyards.</p> <p>All trains from the north and west of Port Augusta seeking to access the Whyalla branch line must enter into Port Augusta before coming to a halt in the Spencer Junction Railyards and moving back out towards Whyalla. Significant locomotive power and therefore significant costs are involved in starting and stopping these trains which in the past have carried heavy loads of iron ore for loading to export vessels in Whyalla. Construction of a triangle link to the west of Port Augusta will allow trains to/ from the north and west of Pt Augusta to seamlessly access the Whyalla line without the inefficiencies of having to stop and restart the train in the township.</p> <p>Whilst the project is not required at this time, any resumption of mining efforts to the north and west of Port Augusta will be expected to increase demand for rail movements to Whyalla and/ or other ports that could be established on Eyre Peninsula.</p>
<p>Gawler Craton Rail Responsibility lies with one or all of ARTC, Private Sector Proponents, Commonwealth & State Governments</p>	<p>Some of the State's largest mines in the Far North are not currently connected to the Interstate Mainline (IML) rail network. BHP's Olympic Downs mine at Roxby Downs, Oz Minerals' Prominent Hill mine, and their recently approved Carapateena venture do not have any rail options available, despite their freight volumes, and are serviced by road, based around the Stuart Highway.</p> <p>The IML connects Australia's mainland capital cities and runs through Port Augusta to Tarcoola and then northwards from Tarcoola through the State's Far North to Darwin. There is some potential to construct a new rail link from the existing IML approximately 10-15km South of Pimba to the Olympic Dam mine, either as a stand-alone service or incorporating links through a rail loop to Carapateena and Prominent Hill mines, and back to join the Tarcoola to Alice Springs section of track. Several other mining prospects may also be able to access this rail loop should they proceed to production.</p> <p>There is also some potential to develop an intermodal terminal at Pimba on the existing IML as an interim rail solution and then using High Productivity Vehicles from the rail terminal to the mine site.</p>

Subject to Demand Projects (Continued)

Project	Description
<p>Port Augusta Intermodal Terminal</p> <p>Private Sector Responsibility</p>	<p>Port Augusta is at the transport crossroads in Australia – where nationally significant road and rail corridors intersect at the head of Spencer Gulf. It seems an ideal location for a rail terminal if sufficient demand can be established. Several sites have been proposed in the past including in Spencer Junction (railyards in the township itself), at Port Augusta West and at Stirling North (where the Leigh Creek coal line intersects the IML). None have progressed to establishment at this stage.</p> <p>Nonetheless, the potential to establish a terminal remains and most recently re-entered discussions as a potential solution to cater for the renewable energy projects that are progressing in the area surrounding Port Augusta. Approximately 6000 x 40 foot containers are expected to be transported in the short term for this project. The mining sector could provide some demand for the facility in the longer term but this aspect has not been well studied as yet.</p>
<p>Crystal Brook to Tarcoola Crossing Loops</p> <p>ARTC Responsibility</p>	<p>The IML running northwards from Adelaide to Port Augusta and westwards towards Tarcoola passes through Crystal Brook in the State's Mid North. At Crystal Brook the IML intersects with the Crystal Brook to Parkes (via Broken Hill) and thence to Sydney section of track. This network caters for interstate passenger services, and intermodal container, bulk and break bulk services.</p> <p>There are many high tonnage mining prospects (principally, but not limited to iron ore ventures) to the north and east of the State that could utilise the Crystal Brook to Tarcoola section of track for both ore movements to port, as well as for the movement of inputs to the mining process. They will be mixing with other rail services on the track travelling at different speeds.</p> <p>Subject to these mining ventures coming into production additional crossing loops (facilitating passing of trains running at different speeds and/or in different directions) may be required to expand network capacity. The Adelaide to Tarcoola Rerailing project currently underway will increase capacity on the network through availability of heavier axle loads and faster trains.</p>



Subject to Demand Projects (Continued)

Project	Description
<p>Monarto Intermodal Terminal</p> <p>Private Sector Responsibility</p>	<p>Monarto is a small township adjacent to the South Eastern Freeway and IML rail network (Adelaide to Melbourne line) located approximately 63 km from Adelaide between Callington and Murray Bridge.</p> <p>Some significant facilities have established in the area due to the availability of flat and relatively cheap land including Big W Distribution Centre, Adelaide Mushrooms, Ingham Chickens, Australian Portable Camps and associated facilities such as trucking depots. There are other significant freight generating facilities nearby in the surrounding townships such as Murray Bridge.</p> <p>An intermodal terminal has been promoted for the area for some years but to date various proponents have been unsuccessful in establishing a rail presence in the vicinity. Nonetheless, the terminal concept continues to be progressed by private sector proponents and is expected to cater for existing freight generators, as well as new rail customers and new products. Proponents anticipate that the terminal complex will be attractive for the 2-way movement of full and empty containers for sectors within and across the region and beyond (eg: wine, grain, meat, hay, as well as other unitised and containerised hard freight).</p>
<p>Parafied Airport Freight Links</p> <p>State Government Responsibility. Some contribution from AAL</p>	<p>Parafield Airport is approximately 18 km north of the Adelaide's cbd and is adjacent to Mawson Lakes. The airport is principally used by small private aircraft and for pilot training but has large tracts of land available that is suitable for industrial and commercial development and following the establishment of anchor tenants, expansion will likely be rapid.</p> <p>An opportunity exists to connect the Parafield Airport development area into the North-South Corridor via duplication of Elder Smith Road and an extension of a High Productivity PBS 3A heavy vehicle corridor to Pt Wakefield Rd through Greenfields (using the existing road network). There is significant land available for industrial and commercial development.</p>



Subject to Demand Projects (Continued)

Project	Description
<p>Regional Airport Upgrades</p> <p>Local Government Responsibility (potential contribution from State and/or Commonwealth Governments)</p>	<p>Regional airports are generally under the care and control of local government and are vital to the social and economic life of regional communities. They facilitate access to friends and family, central services such as health facilities and the movement of time sensitive freight (eg: seafood). When sufficient product is available regional airports may require upgrades to accommodate aircraft that funnel time sensitive and high value freight to Adelaide International Airport for subsequent export on wide bodied international passenger services destined for key interstate and international destinations.</p> <p>These regional airport expansion projects can facilitate access to lucrative domestic and international markets and present opportunities to expand market access for regional high value, high margin, short shelf-life fresh perishable products such as abalone, lobster and other seafood, dairy and meat products.</p> <p>As most freight is carried in the belly of passenger aircraft, rather than seeking direct air freight services to regional airports, support efforts to ensure that Adelaide International Airport remains an attractive destination for foreign airlines will provide greater capacity and greater market access benefits for our regional exporters.</p>
<p>New Port on Eyre Peninsula (Cape Hardy)</p> <p>Private Sector proponents – Iron Road.</p> <p>Local road network may require State & Local Government contributions</p>	<p>Iron Road's Central Eyre Iron Project is an estimated \$4 billion project that involves an iron ore mine at Warramboe near Wudinna on Eyre Peninsula and a 148km 25 tonne axle load rail line from Warramboe to a new port at Cape Hardy (7km south of Port Neill).</p> <p>The proposed new port is expected to be built to a 70-90 million tonne annual capacity, involving a 1.3km jetty and loading to Panamax and Capesize vessels. No dredging will be required. Iron Road is initially expected to utilise 20 - 24 million tonnes offering opportunities for 3rd party access and the opening up other prospective mining ventures.</p> <p>Discussions are also ongoing to utilise the new port for grain exports.</p>
<p>New Port Upper Spencer Gulf (Myponie Point)</p> <p>Private Sector proponents (Braemar Infrastructure)</p> <p>Local road network may require State & Local Government contributions</p>	<p>Myponie Point, located approximately 10 km north of Wallaroo, has been earmarked as a future location to establish a high-capacity, multi-user port in the Spencer Gulf.</p> <p>Magnetite Mines (formerly Royal Resources) has entered a partnership with Braemar Infrastructure with the aim of developing its Razorback Iron Ore mine, a large (3 billion tonne) low grade, high tonnage magnetite resource in the central portion of the Mawson Iron Project. Razorback is located approximately 250 km North-North East of Adelaide and is surrounded by the towns of Peterborough, Burra and Yunta.</p> <p>The project involves mining and crushing onsite and constructing a 300km buried pipeline to transfer a slurry of iron ore fines and desalinated seawater from Mawson to a floating port, five nautical miles off shore at Myponie Point where the slurry will be dewatered and stored ready for loading to export vessels. Water will be returned for reuse to the mine.</p>

Subject to Demand Projects

(Continued)

Project	Description
<p>Whyalla Port Access</p> <p>No Cost</p> <p>State Government responsibility in partnership with new group controlling Whyalla Port (Arrium)</p>	<p>Whyalla located on the upper east coast of the Eyre Peninsula. It has a long history as a steelmaking and iron ore mining city, as well as past ventures in a heavy engineering (including shipbuilding). The port of Whyalla is controlled by the company under an Indenture Agreement and historically access to the port has been considered difficult.</p> <p>In 2007, new transshipment handling processes were implemented, by then owner Arrium to load iron ore mined at its various mines on Eyre Peninsula and in the Far North of the State onto barges for transport to larger capesize bulk carrier vessels waiting in deeper water.</p> <p>Negotiating 3rd party access to Whyalla will benefit a variety of bulk shipping operators, service providers and customers, particularly for the mining sector BUT it is imperative that we ensure that access for 3rd party operators is negotiated NOT just for 3rd party cargoes ie: access must be facilitated for 3rd party vessels, 3rd party stevedores, 3rd party equipment etc so miners and other potential port customers can freely negotiate competitive bids for cargo handling from mine to ship with a variety of service providers, vessel handlers and stevedores.</p> <p>The lead time for establishment of a new port is upward of 10 years so access to existing ports and facilities can provide interim solutions for junior miners. In light of Government assistance and support for the Arrium acquisition, discussions aimed at expanding access are ongoing with the new owners. Whyalla represents a good shipping option as infrastructure already exists (although depth in the port itself is constrained).</p> <p>An upgrade of wharf facilities, loading speeds, vessel handling and stockpiles would likely be required to increase throughput to any significant extent.</p>
<p>Port Bonython</p> <p>Spencer Gulf Port Link consortium / Private Sector proponents (road network may require State Government contributions)</p>	<p>Port Bonython is an existing deep water port (20m of water available) located in the Upper Spencer Gulf area of South Australia and is operated by SANTOS on behalf of the Cooper Basin Joint Venture partners under an Indenture Agreement with the State Government. The port lies 25 km north of Whyalla and has an existing 2.4 km petrochemicals wharf (imports and exports) and regularly berths small Capesize vessels.</p> <p>Interstate Mainline rail is nearby (approximate 17.5km spur from Whyalla line and 6.1km rail loop proposed) as are significant land resources and existing industrial development. High capacity road access available and Lincoln Highway located nearby.</p> <p>After a competitive tender process, Spencer Gulf Port Link consortium., including Flinders Port Holdings, Australian Rail Track Corporation (ARTC), Leighton Contractors and Macquarie Capital won the right to develop a new deep water loading facility, principally aimed at iron ore mines. Significant work has been undertaken to date. Engineering studies and the requisite Environmental Impact Study are complete so a comparatively quick start-up is possible when required.</p> <p>Project involves rail spur and loop, iron ore storage, a new 3km jetty and loading infrastructure for 25 million tpa in Stage 1, expanding to 50 million tpa in Stage 2 if demand warrants.</p>

Subject to Demand Projects (Continued)

Project	Description
<p>Port Thevenard Flinders Ports</p>	<p>The Port of Thevenard is 793 kilometres west of Adelaide and 3 kilometres from the centre of Ceduna. The approach channel depth of 8.2 metres constrains vessel size. Throughput includes gypsum, grains and seeds, salt and mineral sands.</p> <p>So as to accommodate new and expanded mining ventures in the region Thevenard's shipping channel depth could be increased to 10.7m to enable it to handle larger vessels and increased tonnages.</p>
<p>Pt Pirie Upgrade Flinders Ports / Private Sector proponents</p>	<p>Port Pirie is located on the east coast of Spencer Gulf, 223 km north of Adelaide. It has a long history of shipping grain and ores associated with the Broken Hill mines. The Nyrstar lead/zinc (and other products) smelter is located in the township. Grain is no longer loaded at the port although the silo complex is still in use. The port is relatively shallow (8.2m declared depth – 6m draft) and has a long and narrow entrance channel (9 nautical miles). The port is connected to the national road and interstate rail networks.</p> <p>Port Pirie offers an interim solution for Braemar Province miners (mines located towards the NSW border – Peterborough to Broken Hill) that could involve a new conveyor and stockpile. Port constraints and high upgrade costs mean that the proposal is to utilise 16-17,000 tonne barges transshipping to 160-180,000 tonne vessels waiting offshore.</p>
<p>Leigh Creek Rail / Intermodal Private Sector Proponents</p>	<p>The Leigh Creek railway is standard gauge and is owned by the State Government, running from the Leigh Creek coal mine (north of Port Augusta) for approximately 250km south to the Port Augusta power station (via Stirling North). Neither facility is operating today.</p> <p>There may be some potential in the future, subject to development projects in the Cooper Basin proceeding, to establish an intermodal terminal to service the needs of a raft or projects north and east of Leigh Creek (principally Unconventional Gas projects in the Cooper Basin area, but not exclusively). Freight, which might include all or some of pipe, drill rigs, fracking sand and general supplies, would travel by High Productivity Vehicles by road from the terminal to the mine site(s).</p>
<p>Multi Species Livestock Spelling Yard Private Sector proponents (Local / State / Commonwealth Government contributions may be necessary to facilitate access by Heavy Vehicles)</p>	<p>There is a significant quantity of livestock of various kinds raised in the Far North and west of the State, and beyond in areas such as the Northern Territory, which are transported between remote properties and abattoirs and export points in SA.</p> <p>A Multi Species Livestock Spelling Yard is proposed for the edge of Pt Augusta (northern side preferred) and will cater for more species than just sheep and cattle (eg: horses, camels, goats etc.).</p> <p>This facility could be expected to incorporate feed and watering facilities, a Heavy Vehicle Staging Point, and cater for other animal welfare requirements, biosecurity facilities, Road House / Fuel, and add-on/associated service.</p> <p>The proposal has a wide catchment with the involvement of the NT Livestock Association and Far North Pastoralists.</p>

Case Study: Using Technology to Better Utilise Existing Infrastructure Capacity

Technology is increasingly impacting the way we work, the way we interact and our daily lives in general. The transport and logistics sector is no different to others and will need to be prepared for the changes in the way that we do business that technology will inevitably bring to our workplaces.

Indeed, there are emerging technology based opportunities that can capitalise on the network investments that have already been made through improved utilisation of existing capacity and the application of new and improved technologies. Just a few examples include:

- The Australian Rail Track Corporation's (ARTC) Advanced Train Management System (ATMS) increases the capacity of the interstate main line by allowing trains to operate safely closer together. It is also expected to deliver improved reliability through better on-time performance, increased safety through authority and speed limit enforcement and operator savings through less fuel consumption, less wear of wheels and brakes, and fewer train crew hours; and
- Heavy Vehicle "Platooning" occurs where trucks are electronically linked, travel in close proximity to each other and use front-facing radar and anti-collision systems to deliver significant fuel savings for carriers and helping to improve truck driver retention and safety. Introduction of this technology is some way into the future (much further away than ATMS) but it is experiencing strong interest and ongoing development internationally.

We also need to be ahead of the game in our planning so that emerging developments are facilitated and where necessary, their impacts are controlled. We need to:

- Protect our airspace for and from the future use of drones for things such as Pizza deliveries and delivery of small packages ordered online through services such as Amazon and EBay. Drone deliveries are part of the future BUT the industry is not sufficiently advanced in their use and planning so they must be controlled, particularly around airports;
- Recognise that freight units will continue to get bigger – longer and heavier trucks, longer and heavier trains, longer and wider ships, larger aircraft filled by regional feeder services, moving more people and freight – and our infrastructure will need to expand to accommodate them;
- Plan for the increasing use of driverless and electric vehicles, including freight units; and
- Accommodate increasing purchases made over the internet (more home deliveries as opposed to physical shopping) and greater transparency along the supply chain, including tracking and monitoring of parcels and loads. An expansion of real time traffic and incident information will also be in demand.



¹The Tyranny of Distance: How Distance Shaped Australia's History, Geoffrey Blainey, first published 1966

²Economic Impact Assessment and Strategic Analysis of the SA Transport and Logistics Industry, SAFC 2010

³Who Moves What Where: Freight & Passenger Transport in Australia, National Transport Commission, 2016

⁴Australian Infrastructure Audit, Infrastructure Australia, May 2015, <http://infrastructureaustralia.gov.au/policy-publications/publications/Australian-Infrastructure-Audit.aspx>

⁵Economic Impact Assessment and Strategic Analysis of the SA Transport and Logistics Industry, SAFC 2010

⁶ Assessment Framework: For initiatives and projects to be included in the Infrastructure Priority List, Infrastructure Australia, June 2017, Table 29, Page 92 <http://infrastructureaustralia.gov.au/policy-publications/publications/files/Assessment-Framework-June-2017.pdf> accessed 5 Dec 2017

⁷ A Functional Hierarchy for South Australia's Land Transport Network, DPTI, accessed 18/4/17 online at https://www.sa.gov.au/_data/assets/pdf_file/0016/10609/A_Functional_Hierarchy_for_SAs_Land_Transport_Network.pdf

⁸10 'Now' Projects to reverse slow pace of promised Government Tenders on Metro and Regional Civil Works', Media Release, Civil Contractors Federation (SA) 15 June 2019

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