

DELIVERING OUR TRANSPORT FUTURE NOW

north-south corridor northern connector



Part G. Justification of the project

24 Justification of the project

Project Impact Report Volume 2

An environmental, social and economic assessment



Government of South Australia
Department for Transport,
Energy and Infrastructure

24 Justification of the project

Justification for the project, as identified in this Project Impact Report, comes from the need for the project; the ability of the project to meet planning objectives and the adopted project objectives; the benefits of the project; selection of the most appropriate route; and the ability to manage and mitigate project impacts.

24.1 Need for the project

The need for the Northern Connector has been demonstrated in a number of areas (see Chapter 4). The key contributing factors are summarised below.

National and regional economic drivers

The Northern Connector integrated road and rail transport corridor will facilitate future economic growth and development in the broader Northern region of Adelaide and the Barossa region.

Nationally significant industry sectors present in the Northern Adelaide region Barossa region and wider South Australia that will benefit from an efficient transport network to deliver exportable goods to South Australia's transport hubs, such as Adelaide Airport, Islington Rail Terminal, Port of Adelaide and Outer Harbor include: agribusiness, manufacturing, automotive, defence, transport and storage, mining and energy production.

Regional growth

Substantial population and business growth is predicted for the Northern Adelaide region in the near future. The resulting increase in freight and commuter traffic will place additional stress on existing transport infrastructure, which could limit regional and economic growth if not improved. The upgraded South Road (North–South Corridor) and the Northern Expressway, along with the Northern Connector integrated road and rail corridor, will ease congestion on existing networks and support the region's continued growth.

Travel efficiency

Forecast population growth, combined with expanding industrial activity in the northern region and increased trade and freight movements to and from the Port of Adelaide, Adelaide Airport and North–South Corridor, will increase traffic delays and congestion, particularly on Port Wakefield Road, if not addressed. Port Wakefield Road is expected to reach its traffic volumetric capacity by 2016, and unacceptable congestion and delays for a National Network Link. Moving road freight onto the rail network that bypasses 12 rail line crossings will also reduce travel times and improve rail freight efficiencies.

Safety

With the expected increase in traffic volumes across the Adelaide metropolitan road network, crash rates along Port Wakefield Road are expected to increase.

A continuous, uniform standard of road that provides a safe, high quality road environment has been statistically proven to reduce the number of serious road accidents and fatalities. The Northern Connector, with its expressway standard of design, will significantly improve road safety for north–south traffic currently using Port Wakefield Road.

Freight trains currently operate at high frequencies through densely populated areas around Salisbury, resulting in increased traffic congestion at railway level crossings with arterial roads and increased potential for traffic accidents. Currently, there are 12 level crossings (to the Port of Adelaide), some of which have been the sites of serious traffic accidents.

The Northern Connector rail route would avoid highly populated areas around Salisbury, reducing congestion at suburban rail crossings and risks to local commuter safety.

Amenity

As Port Wakefield Road approaches its capacity by 2016, it will become increasingly difficult for residents to access. The amenity value for residences adjacent to Port Wakefield Road will decrease with increased noise and air quality impacts.

The Northern Connector would shift most heavy vehicle movements away from Port Wakefield Road, improving overall amenity for residents near Port Wakefield Road.

Dense residential areas (e.g. Salisbury, Parafield Gardens and Mawson Lakes) adjacent to the existing freight rail line will also be exposed to increased noise levels as rail freight frequencies increase. The Northern Connector rail route would remove most rail freight traffic away from these areas.

24.2 Achievement of Australian, South Australian and regional planning objectives

The project would achieve, or help achieve, a number of Australian, South Australian and regional planning objectives (see Chapter 3).

The key strategic objectives and how the Northern Connector facilitates them are summarised in Table 24.1.

Table 24.1 Performance against Australian, South Australian and regional planning objectives

Strategic objective	Northern Connector's contribution to objective
Our Cities, Our Future: A national urban policy for a productive, sustainable and liveable future	<ul style="list-style-type: none"> ▪ Helps achieves the productivity, sustainability and liveability goals of the policy

Strategic objective	Northern Connector's contribution to objective
Capital Cities Strategic Planning System	<ul style="list-style-type: none"> ▪ Provides an integrated rail and road transport corridor ▪ Provides national significant economic infrastructure ▪ Contributes to increased efficiency and connectivity along Adelaide's strategic North-South corridor ▪ Reduces operating costs and travel delay between capital cities and major regional centres
Infrastructure Australia <i>(Getting the fundamentals right for Australia's Infrastructure priorities)</i>	<ul style="list-style-type: none"> ▪ Assists in developing a national freight network ▪ Enhances competitive international gateways ▪ Assists in transforming our cities
Infrastructure Australia – National Land Freight Strategy	<ul style="list-style-type: none"> ▪ Northern Connector identified as a key part of national urban motorway networks to freight priority
National land transport Network – Adelaide Urban Corridor	<ul style="list-style-type: none"> ▪ Improves national and inter-regional connectivity for people, communities, regions and industry ▪ Enhances health, safety and security ▪ Is linked effectively to the broader transport network
National Transport Policy Framework	<ul style="list-style-type: none"> ▪ Reduces urban congestion ▪ Improves safety for both road and rail users ▪ Reduces operating costs and travel delay
South Australia's Strategic Plan 2007 Objective 1: Growing Prosperity Objective 2: Improved Wellbeing Objective 6: Expanding Opportunity	<p>Assists to meet targets such as:</p> <ul style="list-style-type: none"> ▪ economic growth, competitive business climate, business investment, job creation, population growth and strategic infrastructure ▪ reduction of serious injuries and fatalities by increasing road safety ▪ increase in affordable housing
30-Year Plan for Greater Adelaide	<p>Would assist to achieve the key directions of:</p> <ul style="list-style-type: none"> ▪ defining and improving a north-south corridor for metropolitan Adelaide ▪ supporting housing and population growth ▪ creating major transit corridors and growth precincts within Greater Adelaide, and integrating land use priorities with long-term transport and infrastructure planning ▪ assisting in the regional distribution of affordable living targets

Strategic objective	Northern Connector’s contribution to objective
Strategic Infrastructure Plan for South Australia	<ul style="list-style-type: none"> ▪ Forms an important link in Adelaide’s 78 km North–South Corridor ▪ Improves South Australia’s competitiveness through efficient freight networks and improved intermodal links ▪ Minimises the impact of freight vehicle movement on the community and environment by appropriately locating and protecting freight routes ▪ Encourages shift to rail transport for passenger and freight movements where justified by environmental, economic or social imperatives ▪ Identifies, protects and facilitates development of a 15–20 year supply of suitable industrial land to meet demand and ensures infrastructure is integrated and timely to support existing and proposed industrial land developments (e.g. transport corridors and intermodal site developments)
Housing and Employment Land Supply Program (HELSP)	<ul style="list-style-type: none"> ▪ assist in achieving elements of HELSP by catering for land supply to meet housing demand, as well as employment land increases over the life of the Plan (to 2038). ▪ services developable industrial land located in northern or western Adelaide
Housing Plan for South Australia 2005	<ul style="list-style-type: none"> ▪ Provides greater and easier accessibility to housing and employment lands and the potential for further land for housing (subject to zoning changes) in the corridor created between the Northern Connector and Port Wakefield Road
Development of Horticultural Industries on the Adelaide Plains – a Blueprint for 2030	<ul style="list-style-type: none"> ▪ Has the potential to improve access to and from key horticultural areas on Adelaide Plains but not impinge on key land identified for horticultural purposes

24.3 Achievement of project objectives

The project objectives (Section 1.2) aim to best balance national strategic objectives with consideration of local area impacts. In developing the preferred route for the Northern Connector, the project objectives have been addressed (Table 24.2).

Table 24.2 Performance against project objectives

Project objective	Northern Connector performance
Provide a safe, efficient, sustainable and integrated strategic land transport link which maximises the benefit cost ration for road traffic and rail freight movement between the northern	<ul style="list-style-type: none"> ▪ new link in Adelaide Urban National land Transport Network linking the Adelaide-Perth/Darwin corridor with mining activity in the States north, the Adelaide-Sydney corridor, the riverland and Barossa Valley in SA and Sunrasia area in NSW/Victoria. ▪ improved access to the Port of Adelaide for rail

Project objective	Northern Connector performance
regions of Adelaide and the Port of Adelaide and the North-South Corridor	<p>freight transport travelling from the north and west of country South Australia</p> <ul style="list-style-type: none"> ▪ free-flowing transport corridor with no signalised junctions ▪ grade separated road and rail ▪ improved road safety (right-angle crash reduction on Port Wakefield Road) and rail safety (no level crossings) ▪ increased road and rail travel speeds; decreased travel times ▪ increased structure clearances to allow for double-stacking of rail containers ▪ a benefit cost ratio of 5.2 for the road–rail (ratio greater than one provides an overall benefit)
Minimise adverse impacts on local communities and the surrounding natural environment, and where possible, enhance community and environmental opportunities	<ul style="list-style-type: none"> ▪ a detailed environmental impact assessment process has been undertaken ▪ a referral will be submitted under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> ▪ retained biodiversity of Northern Adelaide region in landscape planting using indigenous species to replace and offset vegetation removed by the project ▪ enhanced quality of life (e.g. reduced noise) for nearby residents in suburban area to east of Port Wakefield Road and along existing Salisbury freight rail line with reduced road and freight rail traffic
Reduce congestion and the impact of freight activity on the local road network and local communities	<ul style="list-style-type: none"> ▪ freight rail corridor relocated away from densely developed urban areas ▪ freight traffic (i.e. large trucks) removed from local road network ▪ removal of freight and interstate passenger rail delays for road traffic on the local road network
To create medium and long-term employment opportunities for local communities and across the region	<ul style="list-style-type: none"> ▪ Creation of approximately 1662 jobs per year during a 3 year construction phase ▪ Boosting regional skills through employment and industry skills formation programs

Project objective	Northern Connector performance
Link key infrastructure priorities and potential areas of development, thereby contributing to the economic and social development of the local community and wider northern region	<ul style="list-style-type: none"> ▪ road and rail linking Port Adelaide and Outer Harbor to both intrastate and interstate destinations ▪ reduced travel times for commuters travelling to and from the northern suburbs ▪ safer, faster connection to suburban destinations (i.e. Adelaide Airport, sporting venues, beaches, businesses) in the southern and western suburbs ▪ improved access for expanding industries in the region and the states north, and to the national transport network and rail, airport and port facilities; including easier access to employment hubs ▪ improved services to businesses due to quicker, more frequent and more reliable deliveries, lowering freight costs ▪ boosted retail/commercial sector within the region through demand generated by growth
Achieve a practical, flexible, yet sensitive design solution that provides a positive influence on property values and economic development	<ul style="list-style-type: none"> ▪ improved and more efficient link to industrial and commercial areas in the region ▪ consideration of population and employment demographics and community and business needs ▪ consultation with councils, developers and major industries

24.4 Project benefits and opportunities

A range of social and environmental opportunities would be associated with the construction and environmental mitigation of the project.

Economic and social

Key social and economic project benefits and opportunities include:

- provision of a critical link in a free flowing strategic North-South corridor from Gawler to Old Noarlunga
- improving freight connections between the Port of Adelaide and the Riverland and Barossa Valley to the east, Perth to the west and Darwin and Olympic Dam and other significant mining operations to the north
- improved safety for road users by reducing freight traffic and conflicts at at-grade intersections, particularly from Port Wakefield Road
- improved traffic conditions and access for road users and local communities along Port Wakefield Road and Main North Road
- improved freight efficiency and export opportunities

- provision of a safer, faster connection to suburban destinations such as Adelaide Airport, sporting venues, beaches and businesses in the southern and western suburbs
- reduced travel times for commuters travelling to and from the northern suburbs
- improved safety for pedestrians and road users, by reducing freight and rail traffic through suburban areas east of Port Wakefield Road
- improved amenity, by reducing traffic congestion, there would be reduced travel times, and improved fuel efficiency, local air quality conditions and noise for residents living adjacent to Port Wakefield Road, including the suburbs of Paralowie and Parafield Gardens
- improved amenity for residents living adjacent to the existing rail freight corridor in the suburbs of Salisbury North and South, Parafield Gardens and Mawson Lakes
- unlocked commercial and industrial development opportunities along the corridor, including the Economic Development Precinct in Gillman and Defence SA in Port Adelaide
- Supports nationally significant industry sectors in the Northern Adelaide region and beyond
- Freight transport mode shift facilitated from road freight to rail freight
- efficiencies through higher speed and shorter connection to port and intermodal facilities
- improved access to Adelaide the Port of Adelaide for rail freight transport travelling from the north and west of country South Australia.
- Creation of approximately 1662 jobs per year, for a construction period of 3 years.

Environmental

Key environmental benefits and opportunities are:

- increased area of wetland habitat in the northern Adelaide region through wetland offset development (introducing areas greater than those being removed by construction)
- improved stormwater quality treatment through existing wetland modifications and wetland offset development
- enhanced biodiversity of the region through rehabilitation/revegetation of existing wetlands and construction of new wetlands
- enhanced biodiversity of the region through landscape planting using indigenous species
- improved visual amenity through landscaping opportunities

- reduced overall vehicle emissions due to smoother traffic flow
- reduction in greenhouse gas emissions compared to the do nothing scenario.

24.5 Project impacts and management measures

The project area is a complex combination of sensitive environmental features, large industrial/business operations and communities. In developing the Northern Connector proposed route to achieve the project objectives, many, often competing, environmental, social, economic and engineering issues, have needed to be balanced. Inevitably, the scale, nature and location of the project make some adverse impacts inevitable.

Table 24.3 summarises the key environmental and social impacts of the project, as determined through the environmental impact assessment process, and lists measures to manage and mitigate these impacts.

Table 24.3 Measures to manage and mitigate key potential impacts of the project

Potential impact	Proposed management and mitigation measure
Loss of wetlands (Barker Inlet wetlands) that provide habitat (to threatened and non-threatened bird species), flood protection and water quality treatment	A referral will be submitted to the Australian Government to determine if the project requires assessment and approval under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> . Intertidal and freshwater wetlands would be constructed to offset impacted wetlands at a higher ratio than those being impacted. Rehabilitation and revegetation of existing wetlands (see Section 8.13).
Removal of native vegetation (and subsequent loss of a range of habitat types)	Approval to clear native vegetation will be sought under the <i>Native Vegetation Act 1991</i> . Any native vegetation removed would be offset to achieve a significant environmental benefit, as required under the Native Vegetation Act. The offset would likely be achieved by a combination of landscaping, on-ground revegetation works and/or a payment into the Native Vegetation Fund (see Chapter 17).
Property acquisition	Property acquisition and compensation will be undertaken in accordance with the <i>Highways Act 1926</i> and the <i>Land Acquisition Act 1969</i> (see Section 14.1.3).
Noise impacts to residences adjacent the road/rail corridor	Locations of possible road side noise barriers to be investigated during detailed design. Noise treatment will be offered to eligible residences as determined under DTEI's Road Traffic Noise Guidelines (see Chapter 11).
Physical and social severance of communities by construction and operation of road-rail corridor, particularly in the Suburbs of Waterloo Corner and St Kilda	Providing an overpass/interchange at Waterloo Corner ensures that access is maintained (see Chapter 13).

Potential impact	Proposed management and mitigation measure
Visual amenity impacts	Develop a landscape design and urban design framework to ensure the project is visually integrated with existing land uses
Increase in localised flooding and drainage	Maintain existing natural surface flows with openings in embankments (via culverts) and use of bridges
Social impacts from construction activities including noise, vibration, air quality and traffic access changes	Develop a: <ul style="list-style-type: none"> ▪ plan to adequately manage traffic during construction (including keeping the community informed of any changes to the local road network) ▪ contractor's environmental management plan (CEMP) identifying measures to manage and mitigate noise, vibration and dust control (see Chapter 22)
Environmental impacts from construction activities including water quality/pollution, acid sulfate soils release, chemical spills	Develop a CEMP identifying measures to manage and mitigate adverse water quality, soil erosion, chemical storage and spill clean-up and acid sulfate soils (see Chapter 22)

24.6 Consistency with principles of ecologically sustainable development

DTEI is committed to ensuring that this project is undertaken in a manner consistent with the principles of ESD. The project has been developed and assessed with due consideration of ESD.

This Project Impact Report demonstrates the ability of the project to address the broad principles of ESD:

- precautionary principle
- social equity and inter-generational equity
- conservation of biological diversity and ecological integrity
- improved valuation and pricing of environmental resources.

Precautionary principle

The assessment summarised in this document has been prepared for DTEI by environmental specialists and has relied on the best available technical information. This information, coupled with best practice environmental standards, goals and measures, has been used to develop mitigation measures to minimise risks associated with potential impacts.

Social equity and inter-generational equity

The potential adverse impacts on environmental resources that are likely to affect social equity have been assessed. Further, mitigation measures to manage these impacts have been developed and are included in this document. These measures

relate to erosion and sediment control, surface and groundwater management, air quality controls, noise controls, traffic and waste management. Implementation of the proposed measures would reduce the impacts on social equity and inter-generational equity.

Conservation of biological diversity and ecological integrity

The Northern Connector has been designed to minimise impacts on native vegetation. The construction would nevertheless result in the removal of fauna habitat (such as wetlands and mangroves). Offset opportunities are currently being investigated in order to help preserve the biodiversity and ecological integrity of the area (see Section 8.13 and Chapter 18).

Improved valuation and pricing of environmental resources

It is difficult to place a monetary value on the environmental and social effects of the project. It is evident that environmental resources in and around the project area are valued by DTEI because of the extent of environmental investigations, planning and design of mitigation measures undertaken as part of the development of the project.

24.7 Conclusion

The Northern Connector integrated road and rail transport corridor would provide benefits of both national and state significance. It forms part of the 78 km North–South Corridor from Gawler to Old Noarlunga.

At the local level, the Northern Connector road and rail corridor would be the most suitable corridor, considering the range of economic, community, environmental and engineering constraints.

The Northern Connector would support the population and economic growth projected for the northern region of metropolitan Adelaide by providing high quality road and rail infrastructure.

There would be localised impacts for some property owners, business operators and the environment. However, the provision of a safer, more efficient road and rail link between the northern region, the Port of Adelaide and the North–South Corridor, benefiting inter-regional travellers and residents of local communities surrounding the Northern Connector. It would also take road freight traffic away from local roads and rail freight away from residential, benefiting both business operators and the local community.

24.7.1 Consequences of not proceeding

The consequences of not proceeding with the project would include:

- continuing and increasing traffic congestion on Port Wakefield Road, Main North Road and Salisbury Highway, causing delays to traffic, especially during peak periods

- continuing and increasing traffic accidents, particularly at intersections
- continuing and increasing disruption from heavy freight trains and interstate passenger trains in the northern suburban areas
- continuing and increasing volumes of freight traffic on Port Wakefield Road and local road network
- not realising improved freight efficiencies and hence, export opportunities
- continuing and increasing long commute times for commuters travelling to and from the northern suburbs
- continuing and increasing high vehicle emissions due to interrupted traffic flow.

24.8 Next steps

The next steps for the project are to:

- exhibit this Project Impact Report and supporting Technical Reports for 30 days and invite the community and stakeholders to make submissions
- prepare a Supplement Report, addressing any submissions and identifying changes to the project as a result of community and stakeholder input and further design
- Obtain Ministerial approval of proposed road/rail route
- seek and obtain funding for project.