

Northern Connector Project South Australia

Project detail

DURATION

- Pre-construction early works and service relocation design commenced November 2015
- Construction commenced December 2016
- Motorway operational March 2020

PROJECT PARTNERS/STAKEHOLDERS

Lead agency:

Department for Infrastructure and Transport

Main contractor:

Lendlease Engineering Pty Ltd

Industry partners:

- LR&M Constructions Pty Ltd
- Civil & Allied Technical Construction (CATCON)
- RAW Recruitment (formerly known as ART Services)
- McMahon Services
- SEM Civil (Salisbury Earthmovers)

CONTRACT VALUE

\$705,566,962 AUD

TOTAL PROJECT BUDGET

\$867M AUD

CONTRACT TYPE

Design and construct contract

DESCRIPTION

A key part of the 78 kilometre North-South Corridor, the Northern Connector is a six-lane (three lanes in each direction), 15.5 km concrete motorway, providing a vital freight and commuter link between the Northern Expressway, South Road Superway and Port River Expressway. The Northern Connector was designed to support the significant increase in population growth, road and rail freight tasks and economic expansion in the northern Adelaide region, while balancing social and environmental impacts on the broader community.

The project also includes:

- South Australia's first major concrete road.
- Construction of four interchanges with dedicated ramps providing direct access to and from the new motorway.
- Construction of a shared-use pedestrian and bike path extending the full length of the new motorway (approximately 16 km), connecting with the Northern Expressway's Stuart O'Grady Bikeway, and extending (approximately 4km) to Port Adelaide. The completed shared use path from Gawler to Port Adelaide will be a distance of approximately 43km.
- Delivering economic benefits to the local South Australian community, including creating 480 full-time equivalent jobs each year during construction
- Upgrade and improvement to road drainage and stormwater management
- Implementing Intelligent Transport Systems
- Service protection(s) and relocation
- Modifications to the Barker Inlet Wetlands
- Creation of NorthHub, an employment, skills and on-the-job training centre to assist northern jobseekers secure positions on the Northern Connector Project

Procurement process

The Northern Connector Project was announced to the public in 2015 for \$985 million. During the initial planning stages for the project, multiple cost savings were identified and as a result, the agreed funding figure was \$885 million for the project. Further cost savings were identified and when the project was handed over for delivery, the project's budget was set at \$867 million.

A procurement strategy was developed based upon the Department's Procurement Management Policies and Procedures, tailored and captured in the Project Management Plan. The delegation levels for the authorisation of executing contracts were confirmed, being aligned with the Project Governance Plan with the standardise procurements documents utilised. The tender documentation was established based upon the General Conditions of Contract (GC21) and went out to market as a Design and Construct Contract.

After undertaking an exhaustive, comparative tender evaluation, the contract was awarded to Lendlease Engineering Pty Ltd (Lendlease). The contract management of the project was undertaken as per the Contract Management Plan with the final expenditure within the revised budget. This was an amazing result considering all the risks and the unknowns achieved through application of sound project management skills and knowledge.

The South Australian Government set the following targets for the project:

- At least 50% of all jobs to be filled by northern suburbs residents.
- At least 90% of on-site labour hours to be undertaken by South Australians.
- At least 20% of all on-site labour hours to be undertaken by ex-automotive industry workers, Aboriginal people, people facing barriers to employment and trainees and apprentices.

The tailored industry participation plan focused on employment and sub-contracting opportunities specific to the project, implementation of a steel policy and workforce participation commitments. The benefits management approach enabled the decision-making processes with the procurement to expand even broader with consideration of the

longer-term benefit realisation. These two tailored approaches to the evaluation expanded upon the price and non-price evaluation criteria incorporating the benefits realisation in the evaluation criteria to identify alternative solutions. This approach was evidenced in the selection of a previously cost-prohibitive pavement treatment. The preliminary evaluation score favoured the asphalt option, however, with the benefits management and industry participation being applied in the evaluation, the final scores resulted in the concrete option being selected. The project delivered significant immediate and ongoing benefits to the local industry as the concrete was made on site using 100% South Australian cement and quarry materials. During peak production, the plant produced 1500 cubic metres (m³) of concrete per day to produce 13km of pavement for the 15.5km Northern Connector.

Early planning to meet the social benefits targets was critical to the success of the project and began with sending a firm message to the contractors at tender stage about the importance of meeting these requirements. It was identified the project must make a difference regarding its social economic obligations; therefore tenderers were challenged as to what innovative practices could be implemented also supporting the Northern Economic Plan. It was important to acknowledge that tenderers were not to be penalised for their social economic solutions, but rather ensure they were focused on offering solutions that would ensure the State's objectives to create jobs was met, hence the tender evaluation criteria was set at 50% price, 50% non-price assessment,

The Northern Connector Jobs Taskforce also assisted with establishing relationships with northern suburbs MPs, local government, job networks and other stakeholders to further improve employment opportunities for this major infrastructure investment.

The winning contractor created NorthHub, an employment, skills and on-the-job training centre to assist northern jobseekers secure positions on the Northern Connector Project. This was key to the success in providing Indigenous employment and onsite labour (from the target group areas) for the project. NorthHub is the heart of the site office and is managed by several staff to provide recruitment training, mental and wellbeing support.

Project delivery

There were a few barriers to the success of the project due to the planning involved. Initially there was some resistance from contractors, which required educating people at ground level to do something unique to ensure local workers were best placed to gain employment throughout the life of this major construction project. The adoption of a collaborative workplace became contagious throughout the project with teams working together as one. The project was able to integrate new staff from disadvantaged industries that had transferrable skills (i.e. former Holden's employees), however it was acknowledged that a pipeline of work for the continued sustainability of work on projects was required to ensure the continued introduction of new labour to the civil construction industry. The process of setting up these initiatives on projects could be better streamlined, particularly communication between the different arms of Government and the individual projects about what is happening in this space.

Further to the above, Lendlease strategically aligned itself with several local subcontractors (based in northern Adelaide) to perform the role of Industry Partners. This local engagement further ensured the utilisation of local labour, growth and education of these organisations that included CATCON, LR&M Constructions, McMahon Services, SEM Civil (Salisbury Earthmovers) and Aboriginal owned business RAW Recruitment. The Industry Partners were allocated work packages to manage, demonstrating a new standard in leveraging local industry and providing significant employment benefits.

The Northern Connector Project delivered a Plain Concrete Pavement (PCP) solution, and is South Australia's first major concrete road. PCP is widely used in the eastern states and offers increased durability, greater costs efficiencies for maintenance, and provided increased local job creation.

Key benefits of the PCP solution for South Australia include:

Social return

- 100% of the materials were sourced from South Australia, with cement and quarry products supplied by Adelaide Brighton Limited.
- The construction of the concrete pavement supported more than 40 extra jobs and contributed an additional \$11 million in economic benefit to the state.

Not only has the delivery of the PCP solution delivered a low maintenance, value for money solution for South Australia, it will also leave a legacy of local business investment and employee upskilling long after the project completion. The majority of the concrete paving crew was comprised of a local workforce, being trained by experienced staff from the east coast.

Risk management

The early identification of risk allowed a mitigation strategy to be implemented and minimised the impact of risks during the project delivery.

The project was supported by the Project Management Office (PMO) with respect to governance and best risk management practices.

A key project risk was the interface with multiple services and the management of protections and relocations that also required stakeholder management. The approach was based upon multiple lessons learned and engagement with service authorities at the earliest point in time and was incorporated into the Department's Project Management framework. Working with the service authorities in an engaging and meaningful way, undertaking service location, protections and retaining a design buffer around the existing services were all strategies that were employed on the project.

Some additional risk mitigations the project undertook include:

- Equipping the project team with the expertise to oversee the concrete pavement works.
- Engaging independent construction verification consultants to:
 - Oversee the design and construction on behalf of the Department;
 - Undertake audits on a regular basis throughout the construction period;
 - Provide independent advice to the Department to ensure the constructed works are in accordance with the design.



Outcomes and achievements

	Planned	Actual	Variance
Project Cost	\$985m	\$867m	-\$118m
Project Schedule	Sep 2015 – Dec 2019	Sep 2015 – Mar 2020	+3 months
Duration	51 months	54 months	+5.88%
Workforce Participation Rate (Contract 20%) (Stretch target 30%)	30%	33%	+3%
Aboriginal and Torres Strait Islander people Employment	2%	11%	+9%
Jobs filled by northern Adelaide residents	50%	52%	+2%
Jobs filled by South Australians	90%	97%	+7%
Industry Participation Rate	90%	91%	+1%
Whyalla Steel Used	6,500t	6,760t	+4%

The project has had a very strong focus on creating employment outcomes for South Australia.

- A total of 2 900 000 on-site hours have been worked on the project (as at 31 March 2020)
- With approximately 323 individuals contributing to the total on-site hours during the month of March 2020.
- Approximately 97% of all on-site labour hours has been undertaken by South Australians.
- Approximately 52% of all jobs have been filled by northern suburbs residents.
- To date, around 91% of the project spend has been on South Australian businesses and labour.
- Approximately 10–12% of all on-site labour hours has been undertaken by Aboriginal and Torres Strait Islander community, which is significantly higher than the required target of 2%.
- Approximately \$15 million spent with Aboriginal owned businesses.
- Women were employed at almost twice the national rate on the project, which set a new standards for recruitment and local participation. More than 21% of positions across a range of roles

– such as civil engineering, plant operation, safety, environment and administration were filled by women compared to the national average of 11.7% for the construction industry. Five women are among 11 engineers recruited in the project's first graduate intake for 2017.

The project pioneered the implementing of Aboriginal economic, workplace and heritage engagement and management in South Australia, particularly achieving 12% Aboriginal workforce participation for the life of the project, first of its kind in South Australia to reach such highest in percentages.

Raw Recruitment

The Northern Connector project, from a Council perspective is an example of what high quality collaboration should be. In State Government managed projects in the past there was a sense that the local community should be considered in word only. However, the Department's Project Manager and the delivery team have been excellent in consultation, bringing Council in right from the start as a partner rather than a stakeholder.

Salisbury Council

