



Installation of bridge beams for Torrens Road bridge looking south - 6 May 2017

Torrens Road to River Torrens Project Update

Since March, a number of significant milestones have been delivered across the Torrens Road to River Torrens Project.

In April, the new South Road northbound surface road, between Port Road and Henry Street, was opened and traffic was switched on to the new Port Road bridge.

Service relocation milestones

A number of utility services have either been recently completed or are nearing completion. In April, Telstra completed Stage 1 of its installation of new fibre optic and copper cables between Overland Road and Adam Street, Hindmarsh. Stage 2 of these works between Royce Avenue and Overland Road, Croydon Park, was completed in June. These are the largest full scale relocations ever undertaken by Telstra within South Australia. Relocation of the telecommunications infrastructure was necessary to allow unimpeded excavation of the lowered motorway.

Undergrounding of the power lines between Torrens Road and Pym Street was completed on 26 May 2017. The relocation of high pressure gas services across Hawker Street bridge will be finished in July, completing all gas service relocations *across* South Road.

Service relocations including; telecommunications, electricity, stormwater, drainage, gas, water mains and sewer mains are expected to continue *along* South Road and side streets until November. Temporary traffic switches and lane restrictions on South Road and adjacent side streets will be required intermittently to complete some of these works.

Roadwork and bridge milestones

Major pavement and asphalt reinstatement works on Port Road between Coglein Street and King Street are on schedule to be completed in July.

On Saturday 6 May 2017, the first 10 beams for the Torrens Road bridge were installed and the first half of the concrete bridge deck (200m³) was poured on 2 June 2017. The Torrens Road bridge is being constructed in two sections, with the bridge beams for the second half due to be installed in August. Torrens Road bridge is scheduled to open to traffic in October.

On the weekend of 3 and 4 June, the bridge beams for the Hawker Street bridge were installed. Hawker Street bridge is scheduled to open to traffic in September.

Construction of these bridges will allow excavation for the lowered motorway to continue underneath. For more information about the lowered motorway see Page 5.

The T2T Alliance continues to make substantial progress, delivering against critical milestones, and the project is on schedule for completion in 2018. The project supports on average 480 jobs per year during its construction phase.



Traffic switch to Port Road bridge - 10 April 2017



Installation of bridge beams for Hawker Street bridge - 3 June 2017



Installation of bridge beams for the Torrens Road bridge - 6 May 2017

Upcoming construction milestones

- Jul 2017**
 - Pavement and asphalt reinstatement works on Port Road complete
- Sept 2017**
 - Hawker Street bridge open to traffic
 - Cedar Avenue pedestrian bridge complete
- Oct 2017**
 - Torrens Road bridge open to traffic
- Dec 2017**
 - Taylor Bridge widening complete
- 2017-2018**
 - Landscaping and urban design complete
 - Installation of signage, gantries and street lighting complete
 - Lowered motorway excavation and retaining wall works
- 2018**
 - Lowered motorway open
 - Project complete



Asphalt being laid on Port Road between South Road and Coglein Street - 17 April 2017

Construction activities July to September 2017

South Road from Pym Street to Torrens Road

- In July, traffic will be switched from the existing southbound surface road to a temporary road adjacent to the northbound surface road, to undertake service relocations.
- Westbound and eastbound traffic on Torrens Road will be switched on to the first (southern) half of the Torrens Road bridge, to allow construction of the second half of the bridge to commence.
- The Torrens Road bridge is expected to be open to traffic in October 2017.

South Road from Torrens Road to Outer Harbor rail overpass

- Service relocations and kerbing works are continuing on the eastern side of South Road between Torrens Road and Forster Street.
- Pavement and asphalt reinstatement works from Torrens Road to the Outer Harbor rail overpass are scheduled to commence in July.

Outer Harbor rail overpass and shared use path

- Works are continuing along the Outer Harbor and Grange rail corridor.
- A number of noise wall panels have been installed on Day Terrace and Euston Terrace, Croydon. The remaining panels will be installed in late July.
- Fencing and footings have been installed for the shared use path and works to construct the access ramps are underway. The shared use path will connect with the Outer Harbor Greenway.

South Road from Port Road to Hindmarsh Avenue

- In early July, traffic on South Road southbound will be switched to the inside lanes (closest to the centre median) to undertake service relocations between Port Road and Hindmarsh Avenue.
- From September, pavement and asphalt reinstatement works are scheduled on South Road, adjacent to the South Road intersection with Grange Road/Manton Street.

These dates are indicative and may be subject to change. The T2T Alliance will provide advance notification to local residents and businesses prior to works being undertaken.



New northbound surface road on South Road between Tait Street and Pym Street - 2 April 2017

Port Road pavement and asphalt reinstatement works

The major pavement and asphalt reinstatement works on Port Road between South Road and Coglein Street that were undertaken on the Easter weekend (14-17 April) were completed ahead of time. The newly surfaced road comprises six traffic lanes, bike lanes and parking lanes. Minor asphalt works in August are still required to complete this section of road.

The pavement and asphalt reinstatement works on Port Road between South Road and King Street are expected to be completed in July, weather permitting. The new westbound road comprises a parking lane, on-road bike lane, three through lanes, and two right turn lanes at the Queen Street u-turn. The new eastbound road will include an on-road bike lane and three lanes near Queen Street, which expand to seven lanes approaching the South Road intersection with Port Road. These seven lanes comprise a priority bus lane, four lanes that continue through the intersection and two right turn lanes.

With the major pavement and asphalt reinstatement works on Port Road nearing completion, there will be fewer traffic restrictions and easier access to local shops on Port Road, Queen Street and adjacent side streets. The T2T Alliance would like to thank the local community and, in particular, local businesses for their patience during these works.

Car park reinstatement

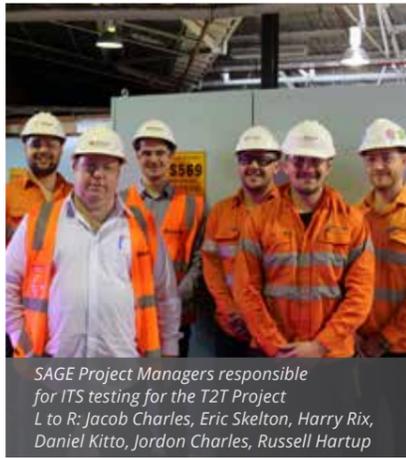
Works to reinstate the car parks in the Port Road median area between South Road and Coglein Street have commenced and are expected to be operational in August. The car parks in the Port Road median between South Road and King Street are expected to be operational in July.

We encourage you to support local businesses with your patronage.

Did you know?

To complete the pavement and asphalt reinstatement works on Port Road between King Street and Coglein Street, more than:

- 6,800m³ of material was excavated
- 3,340 tonnes of road pavement was laid and compacted
- 10,000 tonnes of asphalt was laid.



SAGE Project Managers responsible for ITS testing for the T2T Project
L to R: Jacob Charles, Eric Skelton, Harry Rix, Daniel Kitto, Jordon Charles, Russell Hartup

Partnering for success

The T2T Project is delivering a number of benefits to the South Australian economy, including jobs creation, improvements in travel times and building lasting infrastructure. It also provides opportunities for the T2T Alliance to partner with local businesses to deliver innovative solutions and employment growth.

SAGE Automation and the T2T Alliance have worked closely together to deliver a state of the art Intelligent Transport System (ITS) for the project, including the first full roll out of digital thermal imaging cameras on a South Australian motorway.

The thermal cameras use infra-red to improve detection of incidents, compared with widely used video technology. This new technology is not affected by changing light conditions and therefore provides better images in poor light, such as at night and in fog. The thermal cameras trigger more accurate notifications to road operators. Testing of this technology for the T2T Project is now complete and initial installation is scheduled to commence in August.

Alliance General Manager, Paul Steendyk says, "It's fantastic to work with a world-leading South Australian company designing, manufacturing and installing the complex and highly advanced Intelligent Transport System which will keep road users safe and traffic flowing when the T2T Project is complete."



Example of thermal image camera output

In addition to the 72 digital thermal imaging cameras, SAGE Automation's ITS for the T2T Project includes:

- 39 closed circuit television cameras
- 98 in-pavement road loop detectors to provide automatic vehicle detection
- Five large full colour LED variable message signs to provide instant messages to motorists, such as travel times, incidents, delays or road works
- 50 Lane User Management Signs to enable remote management of vehicle lanes to control traffic flows
- 12 Bluetooth devices providing information on traffic volume and travel times for DPTI's Addinsight app. This app provides road users with real time data on travel times, traffic congestion and provides early information about alternative routes if required
- Four pairs of vehicle classifiers which provide data on what type of vehicles are using the road and predict wear rates, to proactively plan for maintenance.

SAGE Automation has significantly grown its ITS team from four to 18 employees, and has reassigned five existing employees from other areas of the business, to deliver this technology. SAGE Automation is crediting the innovation and growth it has achieved through its involvement in the T2T Project with helping it win contracts to develop similar technology interstate and overseas.

"This project has been a significant catalyst for innovation and growth at SAGE Automation," says Justin Kahl, Regional General Manager, SAGE Automation.

"We are future-proofing the technology on the T2T Project to enable the expansion of communications capability and autonomous vehicle technology for years to come."



Reving up the lowered motorway

In November, preliminary works were undertaken for the 3kms of lowered motorway, the central feature of the T2T Project. Since then, an underpass has been excavated below the Grange Road bridge and over 80,000 cubic metres of soil have been removed from across the site.

Excavation for the lowered motorway is being simultaneously undertaken at a number of locations across the project. Excavation in the South Road median between Grange Road and Hindmarsh Avenue is well advanced and retaining walls are being constructed.

Design and construction of the lowered motorway

To construct the lowered motorway, a top-down methodology is being used, where the area is excavated in layers. After the first layer has been excavated, the construction of the retaining wall commences.

This process is repeated until the designed depth is reached (to a maximum of 8 metres). Trenching is undertaken to install the stormwater drainage and services. Pavement works for the lowered road are completed prior to installing barriers and kerbing.

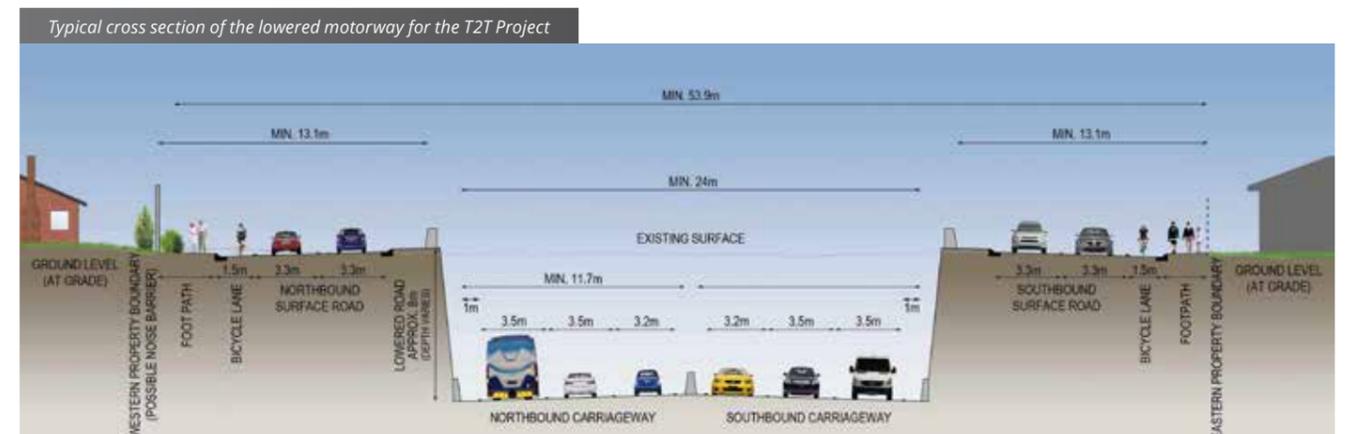
The design for the walls of the lowered motorway is based on an earth retention system developed by the Department of Planning, Transport and Infrastructure (DPTI). The design incorporates regularly spaced three to seven metre long steel nails, encased in concrete grout, which are drilled into the face of the excavated wall. A shotcrete* concrete surface layer is then applied, to provide the necessary stability and flexibility for the lowered road walls. Concrete panels are installed over the shotcrete walls to provide an architectural feature.

This design will deliver community and sustainability benefits, through decreased construction time and a reduction of noise-generating activities:

It will deliver an 87% reduction in concrete and 98% reduction in steel required for construction of the retaining walls, compared to other design options, as well as a 75% reduction in fuel usage and greenhouse gas emissions, due to less plant and equipment, and fewer materials being used.

The non-stop lowered motorway will significantly improve travel times along this section of the North-South Corridor, as well as delivering improved traffic flow and access for local traffic.

***Shotcrete is concrete that is sprayed through a hose at high pressure.**



Taylor Bridge widening

Works to widen Taylor Bridge (the bridge over the River Torrens located on South Road, Torrensville) commenced in late May. The new design will maintain three lanes southbound and two lanes northbound.

What makes Taylor Bridge different from other bridges on the project?

Unlike other road bridges on the project which are being built top down, Taylor Bridge will be constructed using a bottom up methodology.

Preliminary works to build platforms on the river, to safely construct the bridge, are complete. Works are underway to install the piles which will hold two pre-cast concrete supports and three concrete bridge beams. Once the bridge beams are in place, the new bridge deck will be poured, new road pavement and asphalt will be laid, and new footpaths, pedestrian fencing, kerbing, and barriers will be installed. The Taylor Bridge widening is scheduled to be completed in December 2017.



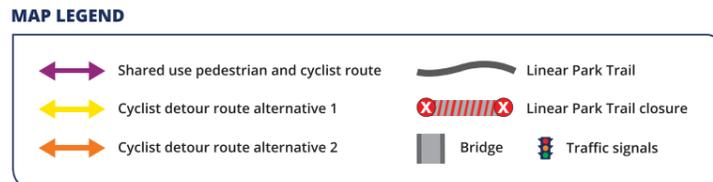
Taylor Bridge

During the works to widen Taylor Bridge:

- The Linear Park Trail will be **temporarily closed** between McDonnell Avenue and South Road for approximately four months.
- The footpath on the western side of South Road, across Taylor Bridge, will be **temporarily closed** during these works.
- Signage has been erected in strategic locations to direct pedestrians and cyclists to alternative routes that will reconnect with the Linear Park Trail.
- Pedestrians and cyclists travelling from West Hindmarsh should use the McDonnell Avenue pedestrian and cycling bridge to access the Brickworks Marketplace and Ashwin Parade, Torrensville.
- The footpath on the eastern side of South Road, across Taylor Bridge, will remain open.

Please refer to the map below for alternative pedestrian and cyclist routes that will be in place during this time.

Alternative routes during temporary closure of Linear Park Trail from late May 2017 for approximately 4 months



Artist Impression: Outer Harbor shared use path showing landscaping in its mature state

Landscaping update

The landscaping plan for the T2T project has been finalised, following detailed planning and consultation with local Councils, DPTI, environmental consultants, landscape and urban designers, and following local community feedback.

The T2T Alliance will replace trees that were removed as part of the project, and improve the original ecosystem with a variety of plantings and increased vegetation.

Where room allows, native evergreen trees will be planted along the road verges and medians, with pockets of deciduous trees featured at major intersections and in open space areas, such as community parks. Native shrubs, grasses and ground covers form the understorey planting and feature in various locations across the project footprint.

Some examples of the native and deciduous trees that will be used across the T2T Project are shown in the images on the right. A planting selection showing the full list of trees, shrubs, grasses and ground covers can be viewed at www.t2talliance.com.au

The landscaping plan for the T2T Project will enhance the local area and create an attractive and integrated community environment. It will provide green medians and verges, and a series of open spaces for community use.

Native Evergreen tree species



Eucalyptus microcarpa
- Grey Box



Brachychiton populneus
- Kurrajong



Corymbia maculata
- Spotted Gum

Deciduous tree species



Fraxinus oxycarpa
'Raywoodii' - Claret Ash



Jacaranda mimosifolia
- Jacaranda



Pistacia chinensis
- Chinese Pistachio

T2T Alliance community street corner meeting



T2T Alliance community thank you event



Community survey results

In April, the T2T Alliance conducted its third community survey, to gauge the effectiveness of communications and our relationship with the community. Members of the local community who have had dealings with the T2T Alliance in the past six months were invited to participate in the nine-question survey. One hundred and fifty-four people responded to the survey and the T2T Project scored an overall good rating.

The T2T Alliance received very high ratings (over 80%) for the following:

- Level of satisfaction with the amount of project information received
- Delivery of information in a timely manner
- Relevance and meaningfulness of project information provided
- Factual and objective nature of project information provided
- Accessibility and ease of dealing with the T2T Alliance

Overall, community perceptions towards the T2T Project have improved since the last survey was undertaken in October 2016.

The survey is used by the T2T Alliance to identify strengths and areas for further improvement. We'd like to thank everyone who participated in the survey and for the comments provided.

The survey will be repeated in six months time. However, we welcome feedback any time. Please visit the T2T Alliance website and click on the 'We value your feedback' tab on the home page.

You can also contact us on the project enquiry line: **1300 794 899** or by email: **enquiries@t2talliance.com.au**

For more information and enquiries

Visit: www.t2talliance.com.au for the latest traffic information including:

- alternative detour route maps and heavy vehicle routes
- temporary road and lane closures and changes to traffic arrangements

Email: enquiries@t2talliance.com.au

Call: **1300 794 899**

You can also go to Facebook ([facebook.com/DPTISA](https://www.facebook.com/DPTISA)) or Twitter (twitter.com/DPTI_SA) for regular posts about the works.

For real time delay information, please visit: www.addinsight.com.au and download the app.

General project and construction enquiries: enquiries@t2talliance.com.au

The T2T Alliance supports equitable access to information. Translation of project information can be provided upon request. Please call the project enquiry line if you would like more details on how to access this service.



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