JANUARY 2021

Australian Government

BUILDING OUR FUTURE

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Tonkin Gap Project and Associated Works

Fact Sheet — Redcliffe Bridge Construction

As part of the Tonkin Gap Project and Associated Works we will be upgrading Redcliffe Bridge to accommodate eight lanes of traffic and building a new western bridge with two additional lanes. The new bridge over the Swan River will be constructed in-situ on a concrete casting bed and incrementally launched across the Swan River from the south-west side of Redcliffe Bridge during the next 18 months.

Ahead of construction, we will establish the area by clearing vegetation, sheet piling and building a site compound within the road reserve.

During construction, the river will always remain open to river users.

Location of casting bed (launch location) and temporary cofferdams

The construction of the bridge will include:

Sheet piling (underway)

Sheet piling involves driving interlocking sheets of metal into the ground to form a barrier similar to a retaining wall. We are using this method where we are working close to the road, as well as when we build the working platforms in the river.

Casting bed construction

We will construct a casting bed on the south-west side of the Redcliffe Bridge. This will allow the construction of the launch nose in segments. From here, the bridge segments will be incrementally launched across the Swan River.

To build the casting bed, we will excavate the ground level, pour a concrete pad and install temporary formwork.

Cofferdam construction

Cofferdams are temporary dam structures used when building in an area submerged in water.

We will construct two temporary cofferdams in the Swan River to build the piers for the new bridge.

Before works start in the river, we will install a silt curtain around the cofferdam works area to contain any silt/sediment disturbed during construction and piling operations.

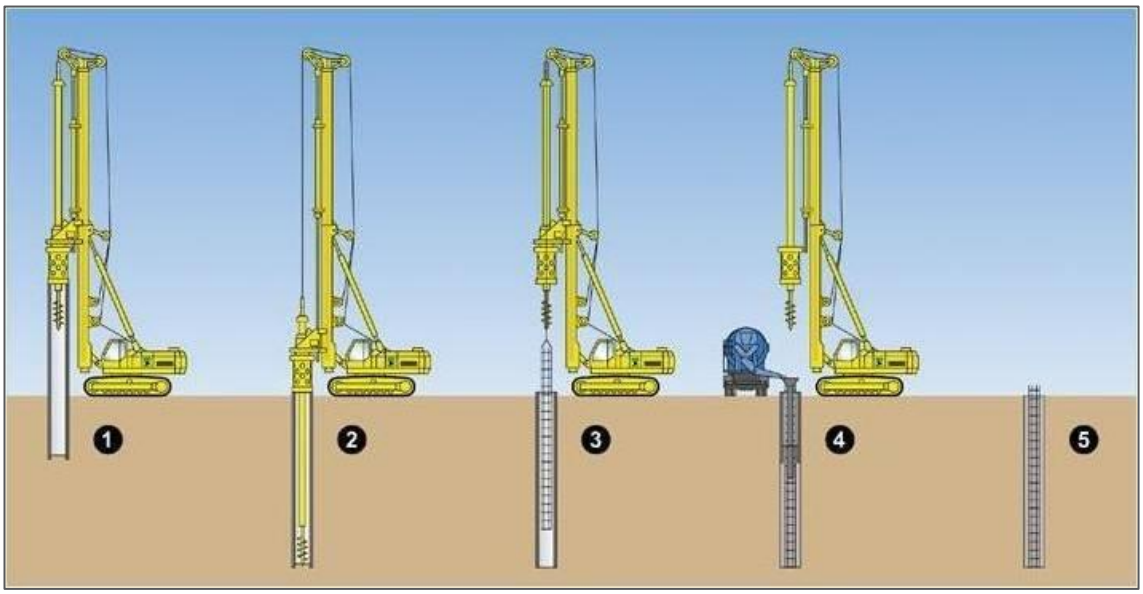
Silt curtain and cofferdam example

The cofferdam construction involves sheet piling into the riverbed to create a cell, which is dewatered and compacted with uncontaminated sand and granite.

These works are subject to the approval from the Department of Biodiversity, Conservation and Attractions (DBCA).

Piling works

Once the cofferdams are built, the silt curtains are removed and the piling for pier construction will begin in the cofferdam area. Temporary steel casings will be placed at the bottom of the Swan River and the pile bore rig will bore out the pile. A reinforcement cage will then be lowered into the hole and concrete will be poured into the pile.



Example of piling works

Pier construction – approx. eight weeks for each pier

The piling provides a base to build the piers.

Steel supports will be put in place and surrounded by formwork, and then concrete will be poured into the formwork.

After the first pier is constructed, the formwork will then be moved to the next pier and the process repeated.

Example pier column and formwork before concrete is poured

Bridge segments and incremental launch

We will construct each of the 17 bridge segments on the concrete casting bed and incrementally launch them across the river from the embankment.

We will launch the first section, the bridge launch nose, from the casting bed towards the piers.

Incremental launch bridge example

The launch nose is a steel structure which remains connected to the bridge for the entire launch process. The bridge will launch up to 18 metres every 2-3 weeks.

Noise walls on Redcliffe Bridge

Noise walls on both sides of the bridge will be included.

The noise walls will extend approximately 3.6 metres above bridge deck level and will be constructed from acrylic panelling to maintain views and allow light to pass through.

Redcliffe Bridge noise walls – conceptual only

What's next?

Once the bridge is launched the temporary cofferdams will be safely removed. We will then complete further works including placement of fill and pavement material to tie in the road and new bridge, application of asphalt and the connection of the new Principal Shared Path (PSP).

Mandurah Traffic Bridge

Mandurah Traffic Bridge is an example of a bridge that was incrementally launched. A time-lapse video of the construction can be viewed here - https://www.youtube.com/watch?v=pliD-_KmZGs.

Mandurah Traffic Bridge

Traffic Management

During the construction of the bridge there will be traffic management and PSP detours in place. Sign up for updates on the website or visit https://www.facebook.com/groups/tonkingap/ for details.

What can I expect?

- Works, vehicle and machinery movements may be noticeable in the area.
- Temporary road barriers and bollards will be installed on Tonkin Highway on the southern side of Redcliffe Bridge to create a safe work zone for our crews on site.
- Noise and vibration management measures are in place, including use of the quietest equipment reasonably available.

What is Tonkin Gap?

Jointly funded by the Federal Government ($232 million) and State Government ($58 million), the Tonkin Gap Project, upgrade of Tonkin Highway between Collier Road to Dunreath Drive, is part of a suite of improvements to transform the Tonkin Highway corridor, providing a high standard north-south transport link from Muchea down to Mundijong. The Tonkin Gap Alliance (TGA) has also been appointed to undertake detailed design and construction of rail-enabling works for METRONET's Morley-Ellenbrook Line.

How can I get more information?

If you have any concerns or questions or wish to subscribe to updates, please do not hesitate to contact us.

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FB: https://www.facebook.com/groups/tonkingap/