FACT SHEET
FEBRUARY 2021

Australian Government

BUILDING OUR FUTURE

mainroads WESTERN AUSTRALIA

Swan River Crossings
Fremantle Traffic Bridge Condition

In late 2020, we sought feedback from the community and stakeholders about the Swan River Crossings Project. Key issues raised included the current condition of the Fremantle Traffic Bridge and the impact on navigational safety.

The Fremantle Traffic Bridge was opened in 1939 with an expected 40 year life and has served its function well beyond that time. The bridge's structure has been deteriorating over a number of years and despite extensive strengthening and maintenance works, the bridge needs to be replaced.

Repairs and maintenance

Over time, the required repairs to the bridge have meant timber elements have been replaced/or strengthened by steel and concrete. The road lanes and footpath widths do not meet current design standards. Current traffic loading is heavier than the bridge was originally designed to carry.

In 2016 significant remediation works were undertaken to minimise the risk of vessels hitting the bridge and causing a collapse, until a replacement bridge was built.

The remaining timber elements continue to deteriorate. Many are hidden from view, in particular underwater decay of the bridge supports.

Ongoing maintenance will not extend the life of the deteriorating timber. Replacing the timber elements like-for-like is not considered sustainable.

Scour

Scour is impacting the stability of the timber piles and has created a hole in the riverbed - 12 metres and growing. Ongoing scour of the river bed has the potential to significantly reduce the load carrying capacity of the piles.

Since 1938, riverbed levels have reduced by almost four metres. This has compromised the existing timber pile embedment depth, resulting in a reduced structural capacity and the inability to resist impact loading from errant vessel impact.

The scouring is spreading upstream and in time, large portions of the bridge timber piers will no longer be supported.

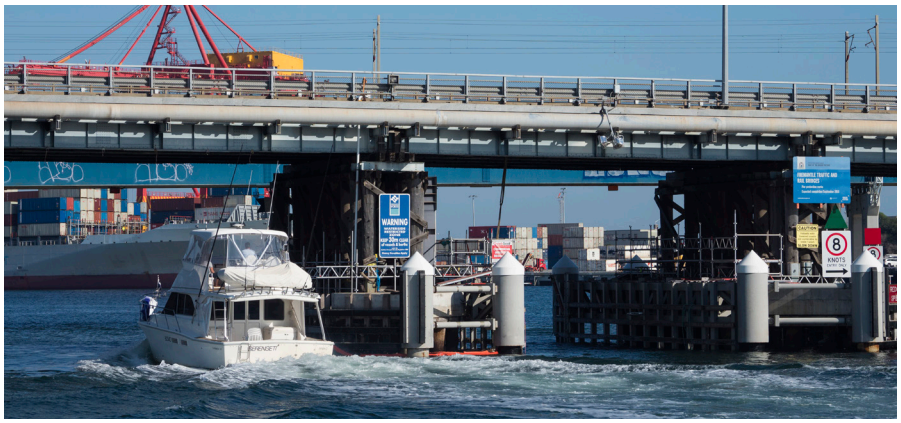
Durability

Durability is a concern. In the past we have encapsulated the wooden piles with concrete. However, over time the concrete has been undermined and cracked, allowing access for the teredo (marine borers) to further deteriorate the wooden piles.

There is ongoing deterioration of timber deck planks and timber bearers, resulting in large potholes on the deck, which have caused damage to vehicles.

In 1975, a 70mm deep concrete overlay was added to protect the bridge timber deck from water ingress. The concrete overlay has now deteriorated and needs attention.

Main Roads now installs 200mm concrete layers to bridge decks, which includes steel for reinforcement. The current traffic bridge deck would not support a new 200mm concrete layer.



Replacement bridge

A replacement bridge has been considered over many years and now with a State and Federal Government funding commitment of $230M, a solution offers the opportunity to replace the Fremantle Traffic Bridge and provide modern and safe standard cycling and pedestrian facilities.

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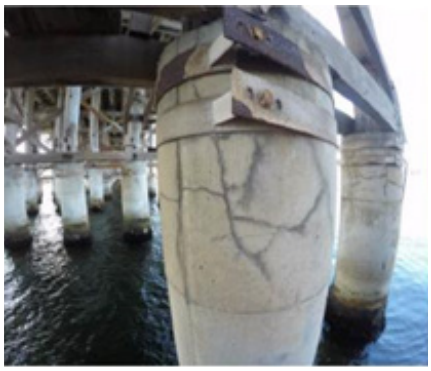

Cracks in concrete encapsulation due to reinforcement corrosion

Multiple corbels split and large areas of deterioration/section loss

Poor condition of timber deck and timber bearers

Teredo worm activity on exposed timber below failed concrete encapsulation

Pedestrian path too narrow, balustrade too low and in poor condition – high risks for cyclists using the shared path

Exposed timber piles at river bed level – noticeable "necking"

A key issue raised during consultation was the safety of river users navigating through the narrow pylons under the bridge and the overhead bridge clearance.

The Fremantle Traffic Bridge has the lowest clearance and narrowest navigation spans of all the Swan River bridges up to the Causeway in East Perth, which limits the size of vessels that can pass beneath it.

The current number one risk to the Fremantle Traffic Bridge is vessel impact. The bridge piers under the rail and road bridges are not aligned, which significantly increases the risk of vessel impact as vessels try to manoeuvre between and through the two bridges. Over time, the fender systems and piers have weakened due to the impacts of vessels colliding with the structure.

The Swan River Crossings project offers improved river user safety with higher and wider spans for yachts and recreational boats, emergency services (Water Police vessels) and will have the capacity to accommodate new, larger vessels and future tourism initiatives.

The project provides the opportunity to revitalise the surrounding area and improve the river landscape for the local community, river users, cyclists, pedestrians, visitors and tourists.

Further information

For further information or to subscribe for project updates, visit www.mainroads.wa.go.au and search 'Swan River Crossings' or contact 138 138.

This document can be provided in alternative formats upon request