Dear Nick

Preliminary Environmental Investigation (PEI)- Proposed Design Changes. Contact No 12.2574.1836

Roads and Maritime Services (RMS) has reviewed your “Preliminary Environmental Investigation” (PEI) for the upstream and downstream options for the Bemboka Bridge widening project dated November 2012.

RMS understands from your investigations that:

- Both options have a similar overall environmental impact, with each having greater and lesser degrees of impact for different criteria assessed.
- Option 1 (downstream) was considered to have a greater potential risk in terms of the local platypus population and community utilisation.
- Option 2 (upstream) was considered to have greater risks in relation to terrestrial ecological factors, visual amenity, land use and property.

In terms of the specific impact on the local platypus colony, RMS understands from your investigations that:

- Option 1 would be likely to have greater potential impact due to the reduced availability of deeper areas within the downstream pool and removal of rocky bed habitat, caused by the placement of the piers in the center of the river and on the banks.
- Option 1 would also have a greater potential impact upon existing burrows near the existing bridge.
- Option 2 would have a greater potential impact on quality of suitable platypus bank characteristics upstream of the bridge.

The current concept design of the new bridge has been designed to match the existing bridge as much as possible.

Based on the potential risks, recommendations and conclusions in the PEI, RMS has now reviewed the concept design and is proposing the below design changes to mitigate or minimise the risks identified in the PEI, in particular the impact on the local platypus colony.

Proposed Design Changes for Option 1 (Downstream).

See attached drawing for reference.

1. Spaning the main river channel from Piers 2 to 4. (Removing Pier 3)

This would remove Pier 3 from the centre of the river. The potential benefits of removing this pier from the design would be:

- Reduce the potential permanent impact of the piers on the rocky river bed habitat.
- Reduce encroachment of the piers on the deeper areas of the river pool,
• Reduce the risk of hydrological impacts that could lead to movement of the sediment bank.
• Removing the need for the central pier removes the need for the construction of an access platform and eliminates all the associated environmental impacts and risks.

As per the original concept design, in order to construct Pier 3 in the center of the river it would have been necessary to construct a working platform across approximately half of the river bed to provide access for the piling rig plant and equipment. The access platform would have been constructed by placing geotextile on the river bed and then placing clean rock material to build up a flat access platform. This platform would have had an approximate width of 10m and length of 18.5m and would have extended from the western bank near Pier 4 to 2-3 meters past pier no 3. The platform would be a temporary structure and would have been removed and the area reinstated after construction. Removing the need for the central pier would remove the need for the access platform and eliminates the associated environmental impacts and risks.

2. Spaning the river from Pier 4 to 6. (Removing Pier 5)

This would remove Pier 5 from the of the western river bank. The potential benefits of removing this pier from the design would be:

• Reduce the removal of vegetation that would have been required for the construction of this pier.
• Reduce the potential permanent impact of the piers on western river bank.


Abutment A/Pier 1

The proposed location of Pier 1 and the Abutment A of the new bridge would be 7.45m further east than the Pier 1 and the Eastern Abutment of the existing bridge. This would mitigate or minimise the potential impact on the eastern bank and the potential impact on the platypus borrow in this location.

If necessary the location of Pier 1 and the Abutment A of the new bridge can be located a maximum distance of 19.1m further east of the Pier 1 and the eastern Abutment of the existing bridge. This would result in a span length of 33m from Pier 1 to Pier 2 which is longest length achieved using the proposed Super T girder.

Abutment B/Pier 6

The proposed location of Pier 6 and Abutment B of the new bridge will be in the same location of Pier 6 and Abutment B of the existing bridge.

4. Design piers to be as close together as possible.

By designing the pier columns to be as close together as possible, the overall width of the footprint of the piers would be minimised and the potential impact on the river banks especially on the eastern downstream bank, where there is a potential risk of impact on an existing platypus burrow, would be reduced.

Proposed Design Changes for Option 2 (Upstream)

See attached drawing for reference.

The PEI identifies impacts to the river banks as the highest risk to platypus habitat on the upstream side and not the impact on the rocky river beds and reduction of the deeper river pools as assessed for Option 1.

RMS has reviewed the concept bridge design for the upstream Option 2 and is proposing the following design changes to mitigate the potential impact on the local platypus colony:
1. Spaning the eastern river bank channel from Piers 1 to 3. (Removing Pier 2)

This would remove Pier 2 from the eastern bank of the river. The potential benefits of removing this pier from the design would be:

- Reduce the potential impact to the highly valued eastern river bank

However, even with the removal of Pier 2 there would still be significant potential environmental impacts from the earthworks on eastern river bank to make access and construct the eastern abutment and Pier no 1.

This change also would still result in Pier 3 being located in the center of the river, its impact is than less than Option 1 because on the upstream side there is little area of depth 1m or greater and there is sediment build up, which has reduced the habitat value of the upstream river pool.

2. Moving Locations of new bridge abutments

To further mitigate or minimise the potential impact on the eastern river bank from the construction of the eastern abutment and Pier No 1, the following design changed is proposed:

By increasing the span length between Pier no 1 to 3 to a maximum achievable length of 33m using the proposed Super T type. The location of Pier 1 and the Abutment A of the new bridge can be between 2.5 to 3.0m further east than the Pier 1 and the eastern Abutment of the existing bridge.

The potential benefits of moving the eastern abutment and Pier 1 further east would be:

- Potentially further reduce the impact to the highly valued eastern river bank

3. Spaning the river channel from Piers 3 to 5. (Removing Pier 4)

This would remove Pier 4 from the western bank of the river. The potential benefits of removing this pier from the design would be:

- Reduce the potential permanent impact of the piers on western river bank.

Comment

Can you please provide comment and revaluate the potential impacts on the environmental risks indentified in the PEI. Please focus on the impact of the bridge and its construction on the local platypus colony for Option 1 and Option 2, taking into consideration the proposed designs changes.

Yours sincerely

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Date: 14/12/12