

Resource Consent submission

To: The Chief Executive
Environment Southland
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Date	11/09/2024 22:21
Online reference number	RC240925370
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Applicant details

Name of applicant	Te Rūnanga o Awarua, Department of Conservation, and Environment Southland
Activity location	Waghorn Road
Application number	APP-20242456

Submission details

My submission relates to the whole application	Yes
Submission uploaded	20240830_Waghorn_Road_Bridge-Submersion.pdf (146 kb)
I am a trade competitor of the applicant (for the purposes of section 308B of the Resource Management Act 1991)	No

For **now**
& **our future**



Outcome sought

I wish Environment Southland to make the following decision

To support the application.

Why I wish Environment Southland to make this decision

Hello,

Southland District Council (SDC) is pleased to provide a proforma submission on the application (reference APP-20242456) for the periodic opening of the Waituna Lagoon. If there are any changes made to the submission or Council wishes to withdraw the submission, we will be touch.

In general the Southland District Council is in support of the consent to open the lagoon.

Having the proposed consent in place should have a positive impact on councils infrastructure compared to not having the consent, however, it will not address all the risk associated with councils assets being flooded periodically (please see the attached advise from Council's engineering consultants).

Council request that road access infrastructure also be included as an important aspect of the lagoon level management regime as submersion of council assets will have a negative impact on council infrastructure resulting in additional cost and increased deterioration of assets that will impact on public access.

Water levels at approximately 2.3m reach the deck on the bridge, at this height Council would need to close access to the bridge for the reasons set out in the attached. It should also be noted that the bridge will likely need replacing during the later stages of the consent. The viability of replacing the bridge in the future, if at all, will, in part, be influenced by the long term water levels of the lagoon. As such the Southland District Council cannot also not guarantee ongoing long term access.

Lagoon Opening

It is noted that for years 6-20 there are higher threshold levels and timeframes. Councils request that consideration be given to having an additional threshold for when there is an extended period of flooding / higher levels of between 2.3m and 2.5m.

It is recommend that the following threshold be added under Lagoon Opening Conditions for years 6-20

4. f) Openings may occur if water levels remain above 2.3m for

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14 consecutive days where opening is not otherwise triggered during that same period.

Council does not wish to speak to this submission.

We thank you for the opportunity to provide feedback. If you require any clarification please let me know.

Regards
Hartley

Hearing details

I wish to be heard in support of my submission	No
I wish to be involved in any pre-hearing meeting that may be held for this application	No

Confirmation

I will serve a copy of my submission on the applicant and I confirm all of the above information is correct

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30 August 2024

Hartley Hare
Strategic Manager Transport
Southland District Council
PO Box 903
Invercargill 9840

Waghorn Road Bridge - Submersion

6-VN127.00 045SO

Dear Hartley,

The Waghorn Road Bridge is located at the eastern end of the Waituna Lagoon and at times the bridge, and its road approaches are partially or fully submerged in water.

The immersion of the bridge and approaches will affect the durability of the bridge and reduce its design life. It also raises some concerns around road safety.

Effects of submersion

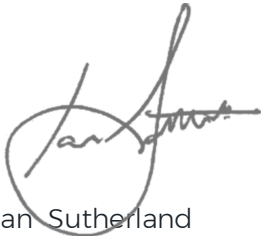
- The timber deck will be ground down significantly more quickly when it is saturated – the deck is softer when wet and is ground down by stones and wheel interaction. The recent necessary deck replacement at Waghorn Road Bridge is a direct result of damage of the previous deck, due to excessive wear, as a result of timber saturation. The wetting and drying cycles will also create swelling, shrinkage, warping and subsequent nail pull out causing weakening of the deck. The lifespan of the deck is reduced as a result of submersion.
- Saturated timber has reduced strength when compared to dry timber. However, the design of the recent Waghorn Road Bridge strengthening, and the use of hardwood has allowed for green timber. The live load capacity of the bridge, if in good condition, is unaffected by the submersion of the bridge.
- The durability and lifespan of the bridge will be reduced by submersion and the continual wetting and drying cycles of the splash zone. The splash zone is the section of the structure that is intermittently in or out of water during the structures service life. Wetting and drying promotes fungal, and algae growth resulting in rotting in the timber. The rate of corrosion of the steel connections in the splash zone is also accelerated.
- The load carrying capacity of a submerged subgrade and pavement at the approaches is reduced. Increased maintenance of the road running course is also necessary as potholes are easily formed in a saturated pavement.

Safety concerns

If the road is submerged, then the road should be closed for the following reasons.

- The depth of water cannot be determined and may exceed the safe driving depth for a vehicle.
- The condition of the road and the bridge cannot be seen. Any serious damage to the road, approach, or bridge deck cannot be observed and vehicles cannot travel on the road or bridge safely.

Yours faithfully



Ian Sutherland
Work Group Manager Buildings and Civil Structures