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Dear Michael,

PALMERSTON NORTH CITY COUNCIL PROPOSED PLAN CHANGE B: NAPIER ROAD

Thank you for your request for Horizons Regional Council's comments on the Palmerston North City Council Proposed Plan Change B for Napier Road.

The oxbow site was visited on 29 November 2017 by Manas Chakraborty (Senior Research Associate, Science & Innovation, Horizons), Jon Bell (Manager Investigations and Design, Horizons) and myself. The site visit was with Lynette and Vaughan Cruden (291 Napier Road), and Ben Currie (Leafland, 1 Robert's Line).

Although this visit was about 18 months ago, Elizabeth Daly (Environmental Scientist Ecology, Horizons) has advised this information is still relevant and the oxbow habitat remains classified as threatened as per Schedule F. She also noted that Horizons has no knowledge of any recent dredging and there is no Horizons resource consent for this activity.

Jon Bell (Manager of Investigations and Design, Horizons) has advised that the Horizons flood level from 2017 itself has not changed. The LiDAR may have updated the ground levels but the flood water surface will be the same as outlined in the discussion below which was initially advised in 2017.

Please see Horizons comments below in regards to the Oxbow Habitat and Flooding.

Oxbow Habitat

In terms of geological formation of this habitat, we confirm that Napier Road Oxbow is an 'oxbow lake', perhaps of the old Manawatu River channel.

In terms of native versus exotic dominance, the margin of this oxbow habitat is dominated by willow with a few native species (which are mostly planted) such as Tarata, Harakeke (flax), Carex Sedge and Coprosma. The oxbow lake margin is highly modified as a result of land use development. Most of the riparian vegetation is restricted to the northern bank of the oxbow, while the southern bank is devoid of any riparian cover in the Cruden's property, as the lake margin is mowed right up to the water-edge.

By comparing historical aerial photos (2005, 2010 and 2016) it seems the lake has gone through several land development modifications and the riparian vegetation (mainly willow)

Kairanga

Marton

Palmerston North

Taihape

Taumarunui

Wanganui

Woodville

along the southern bank of the lake on Cruden's property has been cleared between 2005 and 2010.

As discussed Horizons completed a site visit in November 2017. The water level in the lake was shallow during our site visit and extensive algal proliferation and macrophyte growth were noticed in the western segment of the oxbow. Mr Vaughan Cruden mentioned that the lake has an average depth of more than a metre. According to both landowners (Lynette and Vaughan and Cruden, and Ben Currie) the oxbow lake provides habitat to eels (most probably shortfin eels) and several wader birds. During the site visit we saw one shortfin eel on Cruden's side of the oxbow lake. Mrs Lynette Cruden advised that there have been sightings of blue herons and shags in the past along the lake margin (perhaps in search of eels). This has also been verified by some historical photos shared by Mrs Lynette Cruden.

The western segment of the oxbow is connected to the eastern segment via a culvert which also provides access to the other side of the oxbow lake in the Cruden's property. Mr Vaughan Cruden advised that the western part of the lake was dredged about 15 years ago, while the eastern part was dredged about 2 years ago (years stated in November 2017). The eastern segment seems to have less water clarity with more silt deposition but no algal proliferation. Macrophyte and algal proliferation in the western segment could be attributed to the accumulation of nutrients as a result of surface runoff from surrounding landscape during wet conditions and stagnation of this nutrient laden water on Cruden's side of the oxbow lake during summer. As well as minimal riparian cover, open waterbody with high exposure to sunlight, and the long spell of high temperatures might have resulted into this algal proliferation in the western part of the oxbow. The Cruden's outlined during the site visit that this is not the usual picture of the lake.

In summary, this waterbody even if highly modified with limited native character remaining, has a moderate to light life supporting capacity value, and is identified to be an oxbow lake which is a "threatened" habitat according to Schedule F of the One Plan. This means One Plan Rules regarding discharges of contaminants (Chapter 14) and vegetation clearance (Chapter 13) along the lake margin will be applicable for this site. While One Plan rules will protect this habitat through regulatory process (i.e., by imposing consent conditions), the site does not have enough high priority score to be considered as one of the Top 100 wetland sites (One Plan non-regulatory method for biodiversity enhancement by working together with the landowners) in the Region.

Flooding

Horizons has considered all information available and believes that the advice that Lisa Thomas provided to the Crudens in a letter (August, 2015) still stands as correct. In that letter it stated that "Horizons stands by its finished floor level recommendations for the subdivision. Horizons recommends that any proposed habitable buildings have a finished floor level of at least 37.8m relative to Wellington Vertical Datum, 1953."

This level comes from our calculated 1 in 200 year (0.5% Annual Exceedance Probability) flood level of 37.3 (Wellington Vertical Datum,1953) at the site with an additional freeboard allowance of 500mm. This is because whilst there are stopbanks along the Manawatu River in this area, they are only designed to provide protection from a 100 year return flood event.

Horizons One Plan Policy 9-2 generally discourages new habitable buildings or extensions to existing habitable buildings in areas that are likely to be inundated during a 0.5% Annual Exceedance Probability (1 in 200 year) flood event. Where the flood hazard cannot be avoided, Horizons recommends that the risk be mitigated. Flood mitigation includes having a finished floor level that includes reasonable freeboard (500mm as per New Zealand Standard 4404:2010 – Land Development and Subdivision Infrastructure) above the 1 in 200 year flood surface and ensuring that there is safe access to and from the property during a flood event. This freeboard requirement is to account for factors which cannot be included in the model, such as waves and debris effects. The finished floor level needs to be above the original ground level prior to any land disturbance works.

Horizons can provide information on the level of inundation and recommended freeboard as per NZS 4404:2010 and our One Plan Policy 9-2, however it is Palmerston North City Council as the Building Consent Authority that makes the decision on appropriate freeboard and finished floor levels. It is also Palmerston North City Council's decision about how this recommendation is applied, whether this is by building consent or by subdivision consent conditions.

The 2015 flooding came from overflows from Stoney Creek and local stormwater. We understand that these stormwater issues have been addressed by Palmerston North City Council.

Please note that Horizons does not believe that State Highway 3 provides flood protection to this site and the surrounding area.

Stopbank

Horizons were previously advised that part of this potential plan change would be a proposed road over the stopbank at the western end of the oxbow. Horizons Manager of Investigations and Design has advised that there are no initial concerns about this plan however he confirmed that resource consent is required. One Plan Rule 17-15 requires that resource consent be obtained from Horizons for a range of activities occurring on or near a stopbank. The need for a consent is due to the potential for such activities to adversely affect the function of the drainage scheme.

As per your recent discussion with Paul Joseph (Horizons Scheme Engineer, Central) - Horizons considers a 3m esplanade strip on both sides of the stopbank toe as essential for accessing the stopbank for maintenance and future proofing of the stopbank.

Horizons encourages PNCC to consider sufficient set back from the stopbank to allow access for maintenance, future upgrades, indigenous biodiversity and amenity/recreational values etc.

As discussed with the River Management team, Horizons has no preferences in regards to the vesting of the land or the use of preference standards etc.

Should anyone wish to carry out any activities (including any new access-ways) within 8 metres of the stopbank toe, they will need to first contact Central Area Scheme Engineer, Paul Joseph, on Freephone 0508 800 800 to confirm any resource consent requirements or conditions of work.

For information on resource consents please contact our Consents Team on consents.enquiries@horizons.govt.nz or call our Horizons Duty Planner on Freephone 0508 800 800.

Summary

Horizons is generally in support of the potential plan change. Once the proposed plan change is notified, Horizons will take the opportunity to provide a formal submission.

Once a Traffic Impact Assessment is completed, please request an additional comment from Horizons in regards to public transport and connectivity.

We welcome the opportunity to continue to work with you and Palmerston North City Council to discuss the comments provided in our letter.

Yours sincerely



Sarah Carswell
COORDINATOR DISTRICT ADVICE