

Outstanding Issues Updates from CHBDC to HBRC – 1 August 2022

1) Outstanding HBRC issues

- **Managing public health risk in the Pōrangahau River**

The review undertaken by ESR of the CHBDC QMRA highlighted a number of adjustments that could be made to the modelling exercise. While these adjustments may increase the accuracy of the modelling and theoretical impact of the discharge, there would still remain a public health risk associated with the current discharge. i.e. changing assumptions and empirical relationships in the modelling will fine tune the accuracy of the model, but not eliminate the need for intervention to mitigate risk.

CHBDC have considered potential mitigation solutions. A UV pathogen reduction system is proposed to mitigate public health risk associated with the discharge. Regardless of the further debate with the QMRA modelling, a UV system will be needed.

CHBDC suggest that no further investigation or modelling refinement is needed as it will not change the need for mitigation, the proposed mitigation solution and importantly the resulting public health benefits associated with the mitigation (UV system)

- **Statutory considerations as they relate to additional nutrient loss to the Pōrangahau Estuary (Coastal Environment)**

There are different statutory considerations required for the different location of the proposed discharges. Firstly, the current and future (short term) WWTP discharge associated with the Pōrangahau WWTP site is located at the Pōrangahau River, and is a direct surface water discharge in a freshwater environment. While the new irrigation site and existing Te Paerahi WWTP (dunes) are located in the coastal environment and is associated with a diffuse discharge to land. These are separate activities with separate statutory plans and policies that need to be appropriately applied to the relevant discharge and the associated effects that relate to that specific discharge (refer to Appx L - Pōrangahau and Te Paerahi Long Term – Planning Evaluation (Part B) Discharge to Land Consent – Discharge Site).

In this instance the effects of the future (short term) WWTP discharge associated with the Pōrangahau WWTP have been considered against the **RRMP and RPS (Appx L, pg29-43) and NPS-FM (Appx L, pg 7-11)**.

The effects of the diffuse discharge to land at the new irrigation site in the coastal environment have been considered against the **RCEP (Appx L, pg16-28), RPS (Appx L, pg29-43) and NZCPS (Appx L, pg11-16)**.

The water quality report (Beca, 2021:P:D.25) that informed the planning/statutory consideration concludes that there is a *general improvement of water quality and catchment nutrient budgets in the lower Pōrangahau River and coastal environment*. The conclusions in the technical water quality report confirm consistency with the NZCPS and RCEP objectives and policies in that there is an improvement of water quality and nutrient budgets in the lower Pōrangahau River and coastal environment which includes the Pōrangahau Estuary.

The **NZCPS Policy 21** (enhancement of water quality) only applies where HBRC has identified deteriorated areas (where the quality of water in the coastal environment has deteriorated so that it is having a significant adverse effect). The HBRC coastal planning maps do not identify the Pōrangahau coastal area / estuary as being deteriorated (having significant adverse effects). There are minimum standards in the RCEP that apply which are identified in

the HBRC RCEP - Schedule E – Coastal Water Quality minimum standards class AE (HB). These standards are being met and are considered in the RCEP statutory assessment – Appx L. The primary NZCPS policy of relevance is **Policy 23 – Discharge of Contaminants** which is addressed (along with other relevant NZCPS policies) is considered in Appx L – Section 2.4 pg,11-16.

The relevant **RCEP policies** include, **Policies 9.1/9.2A – Water Quality** which are also comprehensively addressed in Appx L, pg 20-23.

The RCEP summary in Appx L is provided as follows:

RCEP Summary: *The proposal is consistent with the objectives and policies of the RCEP. The discharge site soils are suitable for the application of wastewater under appropriate management practices consistent with the land resources Policy 8.1. Based on the findings of the surface water quality report the proposal exhibits an overall improvement of water quality and catchment nutrient budgets in the lower Pōrangahau River and coastal environment and the effect on surface water quality is consistent with the environmental guidelines set out in Objective 9.1 and Policy 9.1 and 9.2A. The proposal is consistent with the groundwater quality objectives 11.1, 11.2 and policies 11.1 and policy 11.2A as the natural factors such as the underlying geological conditions, hydraulic boundaries and surface water dilution effects reduce the potential for the treated wastewater to impact on the groundwater quality. The risk posed by direct migration of contaminants from the discharge site through the shallow aquifer to the water supply bore is very low and has less risk than the existing discharge directly to the river. The proposal is consistent with the air quality Policy 14.1 as odour from the irrigated wastewater is expected to be undetectable at the property boundary.*

Overall, the proposal is considered consistent with Policies 2.4, 2.6 and 2.9, associated with the adjacent Significant Conservation Area (SCA) Natural Character as the improved water quality outcomes in the Pōrangahau River will contribute towards preserving the natural character of the coastal environment, providing for wastewater services while maintaining and enhancing the coastal environment existing amenity and cultural values.

To reiterate, the existing Pōrangahau discharge to the Pōrangahau River provides direct conveyance of treated ww to the coastal environment (approx. 3km). The Te Paerahi WWTP is in the coastal environment. The current water quality baseline for the coastal environment includes the Pōrangahau WWTP and Te Paerahi discharges. The proposed redirection from direct discharge to a diffuse land discharge before reaching the coastal environment provides an improved treatment process/pathway through soil than the current conveyance of the direct discharge via the Pōrangahau River to the coastal environment. The nutrient mass loads effects assessment (including both the Te Paerahi and Pōrangahau discharge to land) has been undertaken on a precautionary basis and does not include any allowance for attenuation of nutrients through groundwater and soil. In reality some degree of nutrient attenuation is likely to occur (i.e. no discharge is proposed to occur within 100m of the coastal margin) therefore the effects assessment has been presented on a conservative basis. Taking this conservative assessment into account, and the high likelihood that flushing is improved in the lower estuary when compared to the current discharge location for the Pōrangahau WWTP discharge, the proposal has an improved pathway and outcome for the receiving coastal environment consistent with the intent of the NZCPS and RCEP objectives and policies.

- **Management of potential wetland areas**

Wetlands are protected from land development and associated loss by the NES-F. Irrespective of the activity to be undertaken, there is special regulations afforded to management of wetlands. Specifically, no discharges can occur as a permitted activity within 100 m of a wetland.

The HBRC review has highlighted a potential wetland not previously identify in field investigations. This location is in an area that will not be irrigated, however discharge may come close to within 100 m of this location.

In the absence of not knowing if a wetland is present, a revised consent condition has been suggested which states that requirements of the NES-F will be met, including proximity to wetlands. It should be noted that if there was to be a discharge within 100 m, then a resource consent would be sought, as required by the NES-F.

Further, to provide certainty, a field investigation has been scheduled by a wetland ecologist to confirm if a wetland is indeed present. Should one be present, then the conditions suggested will prevail, being irrigation will not occur within 100 m of that wetland; simply put if there is a wetland there will not be any irrigation within 100 m of it.

2) **Change to condition structure re nutrient concentrations**

- **The overview** – setting a tight/low effluent concentration for nitrogen and phosphorus means that a high level of nitrogen and phosphorus removal is needed at the treatment plant. However, this concentration is neither used or regulates effects. The effects associated with nitrogen and phosphorus discharged to land is controlled by the mass loading, in this case condition 52.
- **The proposal** – The nitrogen and phosphorus concentration could be removed completely with a reliance on the mass load condition. However, we suggest there is some merit in retaining them (alongside BOD and TSS) to provide certainty that the wastewater treatment plant is operating at an acceptable standard. An appropriate concentration is proposed.
- **Replacement of ammoniacal nitrogen with total nitrogen** - Ammoniacal Nitrogen was initially included in the suggested conditions but this should have been Total Nitrogen, as assessed in the Consent application and Assessment of Effects.
- **Assessment of effects** – the assessment of effects used in the application did not rely on effluent concentration. It merely relied on a total mass of nitrogen being applied up to the proposed limit (condition 52). It should be noted that the loading is actually a combination of synthetic nitrogen (fertiliser) and wastewater, with wastewater being about half of the loading limit (see table 4.7 to 4.9 of LEI, 2021: P.D.10) with values ranging from 19 to 187 kg N/ha/yr. Fertiliser nitrogen can make up the balance to the proposed 250 kg N/ha limit. The key is changing the concentration will not change the mass loading limit, which is fixed at 200 kg N/ha.
- **Scope** - There could be considered to be a consent scope issue, specifically what is now proposed should to be consistent with what was applied for and notified. With respect to

nitrogen and phosphorus, the critical issue for effects on the receiving environment is not concentration, but total mass loading to the irrigation area. This has been assessed as kilograms nitrogen and phosphorus per hectare per year (Condition 52). This value (being a maximum) has not changed and remains a point of compliance (condition has not changed). Changes are therefore considered to be within scope. It is unlikely that additional parties would have submitted on the specifics of this information, especially as there were no concentrations nominated in the suggested conditions.

3) Circulation of conditions.

Attached are revised consent conditions. We have taken what we had initially in the application and added/revised conditions. These are in response to:

- a) Address submitter concerns (green highlight)
- b) Address regional council thoughts (blue highlights)
- c) Pick up on general thoughts, including consistency with other consents (yellow highlights).

The condition table has two new columns. We have allowed for submitter comments and suggested changes to be included in the first new column. There is an opportunity for the regional council to include their thoughts/changes in the 2nd column. The ideal would be over several iterations we refine wording getting to a point where there might only be a couple rows/conditions where further debate/discussion is needed.