Thursday 15 December 2022

OIA IRO-331

[redacted]@xtra.co.nz

Kia ora [redacted]

Official information request for a Copy of Consent Application - Discharge into Natural Wetland

I write regarding your official information request dated Monday 21 November 2022 for a copy of the Consent Application – discharge into natural wetland.

We have considered your request in accordance with the Local Government Official Information and Meetings Act 1987 and we have determined that we are able to grant your request in full.

Please see attached in our email response to you a copy of the Resource Consent Application – Porirua WWTP – Discharge Within 100m of a Natural Wetland.

Pursuant to Section 7(2)(a), some of the information within that application has been redacted as it contains personal information about private individuals.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Ngā mihi

[redacted]
Team Lead, Communications and Engagement

Wellington Water

PORIRUA WWTP – DISCHARGE WITHIN 100m OF A NATURAL WETLAND

Resource Consent Application

NOVEMBER 2022

Our water, our future.

Document Control

Document Information

Document Data	
Document ID	Porirua WWTP – Resource consent application to discharge within 100m of a natural wetland
Document Owner	[redacted]
Issue Date	14 November 2022

Document Sign-Off

Name	Role	Sign-off Date
[redacted]	Author	11 November 2022
[redacted]	Reviewer	11 November 2022
[redacted]	Approver	14 November 2022

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Appendices

Form 9

Application for Resource Consent

To: Greater Wellington Regional Council
PO Box 11646
Wellington 6142
Attention: Manager Consents

From: Porirua City Council
PO Box 50218
Porirua 5240

1. Porirua City Council applies for the following type of resource consent:
   - Coastal permit

2. The activity to which the application relates [proposed activity] is as follows:

   The discharge of treated and partially treated wastewater from Porirua's wastewater treatment plant within a 100 m setback of a natural wetland.

3. The site at which the proposed activity is to occur is:

   - *At Rukutane Point through an existing outfall at or about map reference NZTM 1,753,097 X; 5,447,922 Y.*

4. Names and addresses of landowners / occupiers (other than the applicant) of land to which the application relates to:

   N/A

5. The other activities that are part of the proposal to which the application relates are:

   The operation of a wastewater treatment plant, the occupation of the coastal marine area by the existing outfall, the discharge of treated and partially treated wastewater to coastal waters and the discharge to air from the Porirua wastewater treatment plant.

6. The following additional resource consent are needed for the proposal to this application relates

   A resource consent application associated with discharge to air (odour) from the Porirua wastewater treatment plant was lodged with GWRC at the end of February 2020.

   A resource consent application associated with the discharge of treated and partially treated wastewater to coastal waters was lodged with GWRC in April 2020.

7. Porirua City Council attaches an assessment of the proposed activity's effect on the environment that—

   (a) includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and

   (b) addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and

   (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

8 Porirua City Council attaches an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

9 Porirua City Council attaches an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

10 The value of the investment of the existing consent holder is $56,427,742 (replacement cost for the WWTP).

11 N/A

12 N/A

13 N/A.

14 Porirua City Council attaches the following further information required to be included in this application:

- *An assessment of the natural wetland and the effects of the discharge on it, prepared by Dr Keesing*
- *An assessment of the Porirua WWTP wastewater discharge against the wetland regulations of NES-F and related objectives and policies, prepared by Mr Peterson.*

Signed.....
(Signature of person authorised to sign on behalf of the applicant)

Date 14/11/2022

Address for Service:

[redacted]
Principal Advisor (Manager- RMA, Consents and Environment)
Wellington Water Limited
Private Bag 39804
Wellington Mail Centre 5405

04 912 4506
[redacted]@wellingtonwater.co.nz

1 Introduction

In 2020 Porirua City Council (PCC) applied to replace its existing:

- Coastal permit for the discharge of treated wastewater from the Porirua Wastewater Treatment Plant (WWTP) to coastal waters off Rukutane Point.
- Discharge permit for the discharges to air from the WWTP.

During the hearing of these applications the hearing panel requested the applicant assess whether consent is also required under the regulations relating to natural wetlands in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F).

This assessment concluded that resource consent is required under regulation 47 of the NES-F. This application is being made in response to that conclusion.

2 Information in support of this application

To support this application two specific reports are provided. These are:

1. An assessment of the natural wetland and the effects of the discharge on it, prepared by Dr Keesing
2. An assessment of the Porirua WWTP wastewater discharge against the wetland regulations of NES-F and related objectives and policies, prepared by Mr Peterson.

This information should be read in conjunction with the existing information provided with the April 2020 application to discharge treated and partially treated wastewater to coastal waters, and subsequent information provided to the hearing through evidence and submissions of the applicant.

It is considered that the combination of these information sources constitutes a complete application under s88 of the Resource Management Act (RMA).

3 Conclusions

The attached assessment by Dr Keesing concludes that:

> *There will, however, be no adverse effects on the wetland from the treated wastewater discharge, because of where that discharge is, and how much of it and how often it might come in to contact with around 50% of the feature.*
>
> *Even where a diluted form of the treated wastewater did come into contact with the feature only the nutrient component is likely to have any effect, and that effect is most likely beneficial (as useful nutrient).*

Dr Keesing has also concluded that a monitoring condition is not needed stating that:

> *…I suggest firstly that monitoring is not needed (the risk of adverse effects is near zero, if not zero). The second, and also salient point, is that it would not be possible to implement a monitoring regime that could inform one of the discharge's direct effect to the feature. It would be near impossible to prove that a changed level of nutrient delivered by the wastewater outfall was responsible for a die back of the oioi (or other vegetation change), if it occurred, rather than some other factor (such as increased exposure due to climate change) being responsible. A general condition measure of the heath of the wetland will mean nothing in terms of causes of change if change was detected.*

The attached planning assessment by Mr Peterson concludes that the discharge is consistent with objectives and policies relevant to wetlands.

Taking these conclusions into account it is considered that this application is consistent with Part 2 of the RMA in that:

- The discharge is an integral part of a wastewater system that provides for the communities health and wellbeing
- Adverse effects on the natural wetland will be avoided and its life-supporting capacity will be safeguarded
- Protection of this area of significant indigenous vegetation will not be prevented by the discharge
- The relationship of Ngāti Toa and their culture and traditions with the wider area, which continue to be impacted by the wastewater discharge, will be improved by the mitigation measures proposed as part of the application to discharge wastewater to coastal waters
- Kaitiakitanga within the wider area, which continues to be impacted by the wastewater discharge, will be improved by the mitigation measures proposed as part of the application to discharge wastewater to coastal waters
- Given that the discharge does not adversely affect the natural wetland, it is considered that the discharge will not prevent the maintenance of the quality of this environment
- The principles of the Treaty of Waitangi have been taken into account in the preparation of Porirua City Council's applications for the WWTP, and will continue to be taken into account through the measures proposed as part of the application to discharge wastewater to coastal waters.

Given the conclusions of Dr Keesing's assessment, which are understood to be supported by GWRC officers, the conclusions of Mr Peterson's planning assessment and the assessment of Part 2 of the RMA above it is considered that this application can be granted on a non-notified basis. Further it is considered that no conditions, in addition to those already being considered for the discharge of wastewater to coastal waters, should be imposed on the consent.

Appendix A: **Assessment of the natural wetland and the effects of the discharge**

Boffa Miskell

Titahi Bay Wastewater Treatment plant Out Fall Coastal vegetation feature

Wetland assessment
Prepared for Stantec
30 August 2022

Executive Summary

A coastal vegetation feature was surveyed (August 5.08.2022). The Clarkson (2013 and MfE 2020) wetland delineation protocol was used.

The feature was found to be a small (2m by 20m linear) saline natural wetland. It is 50% above and 50% below mean high water springs. It is in a gravel and cobble substrate with no evidence of sewage fungi, slimes or sediments. It is around 70m from the outfall pipe and 60m north of the concrete barrier.

It is a significant wetland and therefore protected under the regional plan (PNRP) and a threatened indigenous vegetation type in the CMA and so protected by the New Zealand Coastal Policy Statement policy 11.

The NPS FM does not address all of this feature, because only half of it is a natural inland wetland. However, the NES FM (2020) is not limited to “inland” wetlands; instead, it addresses (one has to assume all) “natural wetlands”.

There will, however, be no adverse effects on the wetland from the treated wastewater discharge, because of where that discharge is, and how much of it and how often it might come in to contact with around 50% of the feature.

Even where a diluted form of the treated wastewater did come into contact with the feature only the nutrient component is likely to have any effect, and that effect is most likely beneficial (as useful nutrient).

CONTENTS

Appendices

1.0 Introduction

I understand that through the hearing process a suggestion has arisen as to the presence of a natural wetland within 100m of the outfall. The feature in question was indicated to me by this aerial.

Explicitly we understand that the hearing panel in its Minute has asked for knowledge of:

a) What the vegetation is.

b) What parts, if any, lie above or below mean high water springs.

c) Whether and to what extent the vegetation is affected by the current discharge.

d) Whether and to what extent the vegetation would be affected by the future discharge (up to 2043).

e) The status of the vegetation under the New Zealand Coastal Policy Statement (NZCPS), Proposed Natural Resources Plan (PNRP), or any other relevant document or classification system.

f) What regulation(s) of the NES-F, if any, we should consider the vegetation under.

2.0 Method

2.1 Identifying the vegetation community in question

The question of what the vegetation is has been answered from a site visit by myself on Friday 5th August 2022 between midday and 1pm. High tide was around 3pm on that day.

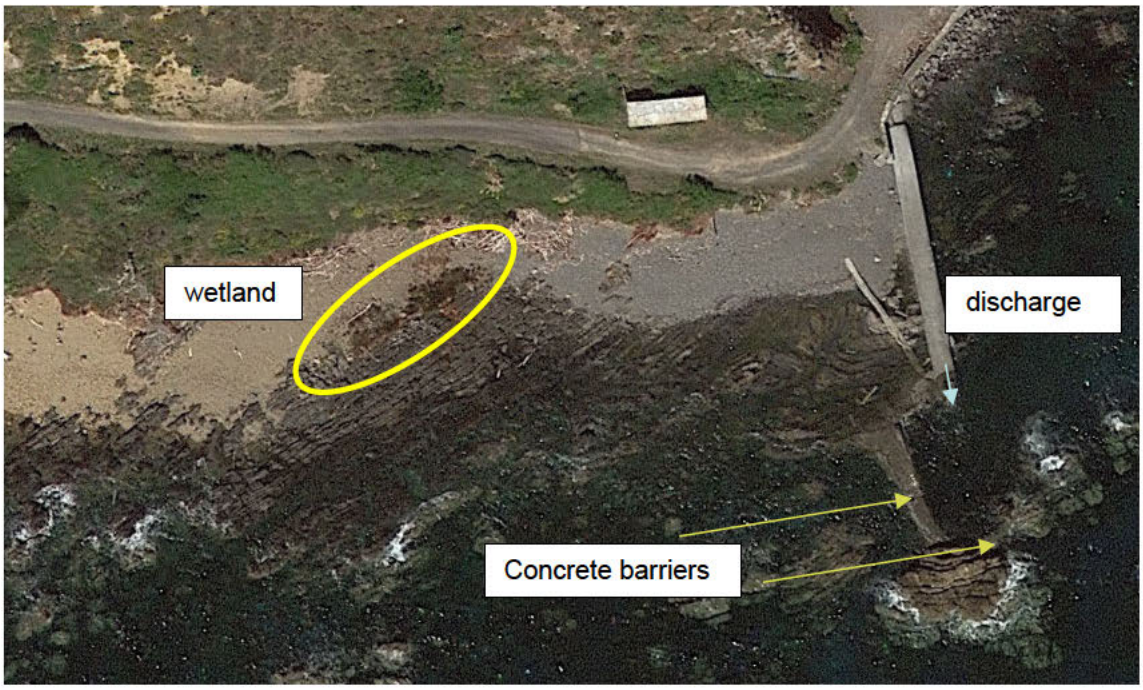
I used a process and methods agreed on with GWRC (see Appendix 1). I acknowledge that I undertook the site assessment before GWRC's review of the methodology had been completed. However, using the rapid assessment part of the method I was able to determine without any difficulty that this feature is a 'natural wetland' and the elements of the methodology on which GWRC provided feedback were not material to the assessment in this case.

3.0 Results

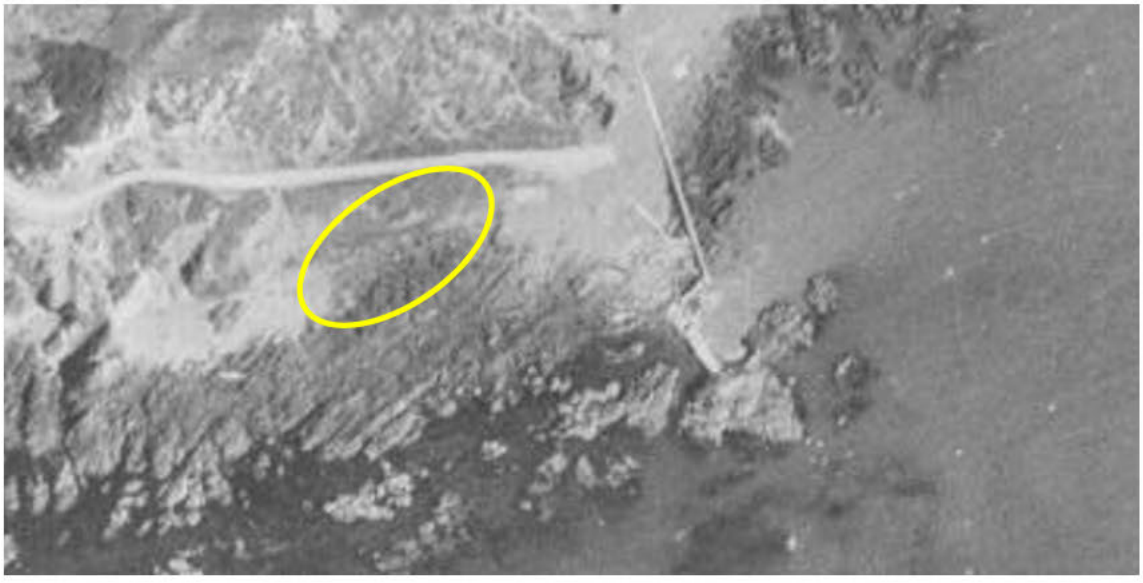
The initial approach was to view the site in retrolens (a website with good quality historical aerials) and look for evidence in the literature of the presence of a wetland historically.

The "wetland" feature is 60m directly west of the concrete barrier, 67m from the outfall. It is 20m long and averaging 2m wide; 4m at widest, 1m at narrowest.

2022. An observable similar coloured and sized feature has been present on google earth aerials since 2006. The yellow circle on the aerial depicts the feature.

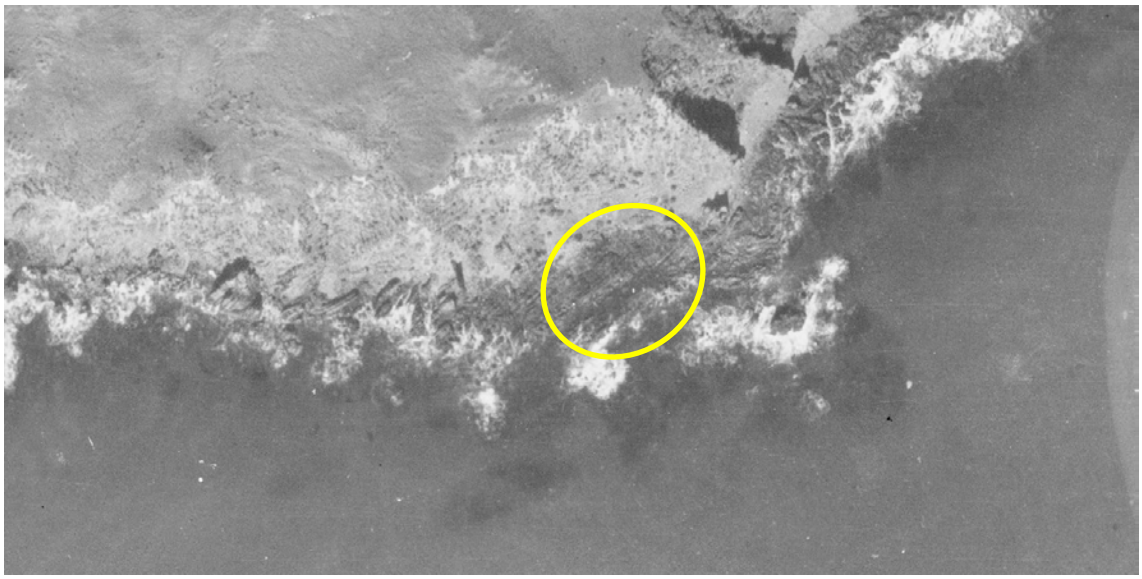


1973. The feature is not, however, clearly evident in early black and white photography, but some form of feature is apparent in 1973.



and 1969

1944. Aerials incapable of determining the presence, but the coastline is significantly different.



The feature, or at least a vegetation type, appears to have been present there since at least 1969.

The concrete barrier has been there since the 1960's.

The first wastewater outfall went in in 1951.

3.1 On Site

My site survey method of identifying the vegetation feature is laid out in detail in Appendix 1. In essence, a site survey was used to rapidly determine the vegetation area, boundaries and if it is obviously a wetland community because of the species presence being clearly and unambiguously FACW or Obligative dominated. The next step was to determine if any of the PNRP / NPS FM (2020) exclusions might be in play. Where it is not obvious or where an exclusion might be in play this would lead to representative plots and a range of indices as well as consideration of the hydrology (see Appendix 1).

3.2 Results

Looking from the above track the feature is clearly evident and discrete, because of its form, texture and colour.

I walked around the entire feature. It is on the gravel bank leading down into and on to the solid rock foreshore of the inner most part of the small bay north of the outfall.

The dominant substrate under the feature was gravel and cobble, not sands or soils. Some of the lower most feature expands onto the harder rock on a thin organic layer.

The slope of the gravel bank is mild (2 or 3 degrees) and then flattens to hard rock.

There is storm debris above the feature (large woody debris) and up to the escarpment bank, meaning storms and king high tides cover this area. But, looking at the seaweed deposition and small debris as well as the "beach" slope I estimate that around ½ of the feature typically receives some high tide saline water intrusion. That is, the feature sits across the Mean High Springs mark.

This is borne out to a degree by the plant assemblage.

The vegetation cover is very clearly that of a natural wetland. A saline, coastal, wetland.

I say this because the dominant cover by far (>90%) is Oioi (*Apodasmia similis*) which is FACW[1] (Clarkson 2021). The other components of the wetland are – sea side - sea primrose (*Samolus repens var repens*) (FACW) (3%), remuremu (*Selliera radicans*) (FACW) (3%), glasswort (*Sarcocornia quinqueflora*) (FACW) (1%), and scattered above and below the oioi, buck's thorn plantain (*Plantago coronopus (introduced)*) (FAC) (3%). Up slope are remnants of a sprayed gorse, Pampas and a taupata (*Coprosma repens*).

This is a common but limited set of plants expected in a saline wetland (Haacks & Thannheiser 2003[2]).

The feature is clearly FACW plant dominated, and the edges of the upper and sides are clearly demarked by the absence of vegetation (cobble and gravels) and the lower boundary by a dispersed diffusion of sea primrose and remuremu.

No plots are required to understand that the feature is a coastal saline natural wetland and can not be excluded as a constructed wetland, pasture, geothermal or even a wetland induced by the construction of a waterbody.

Thus, there is no purpose or requirement to continue through the delineation protocol (dominance test etc) as described in MfE (2020) and the initially proposed method (Appendix 1).

3.3 Mean High Water Springs

While I did not survey at high tide it was apparent to me because of the gradients, the plants and the debris line of high tide, that the lower 50% or so of the feature is below MHW (where the remuremu and sea primrose are found) and the upper 50% is (I believe) above the normal high tide mark (Oioi and a seedling taupata).

Therefore, for a short duration 20-30 minutes (the tide at its fullest) the lower half of the feature is submerged in sea water twice a day.

3.4 Significance

Is this natural wetland significant in terms of section 6(c) of the RMA?

The decision version of the pNRP, which does not differentiate inland from coastal wetland – treating both as natural wetland, makes all natural wetlands automatically significant (a recent

[1] FACW means the plant is facultative wet, see Appendix 1

[2] Phytocoenologia 33(2-3), 267-288. June 2003

revision, however, includes a caveat which appears to ensure the natural wetland is predominantly indigenous before this is applies).

> "*Note that, because of the rarity of wetlands in the Wellington Region, all natural wetlands will meet the representativeness and rarity criteria listed in Policy 23 of the Regional Policy Statement 2013 and are therefore ecosystems and habitats with significant indigenous biodiversity values managed under Policy P40*."

Some evidence shows that the salt marsh extent of the Porirua harbour is 14.7% of the pre-European state (GWRC 2020[3]). It is possible this is a trend common across the region and that salt marsh as a whole are depleted (<30% of its original), but it has not been proven by spatial analysis that saline wetlands are as depleted from their original cover as are inland freshwater wetlands. Therefore, it is not clear that the statement in the footnote to the definition of natural wetland in the PNRP holds true for saline wetlands (but it is likely).

And so, for caution, I have used the Regional Policy set of criteria in policy 23, RPS (even though these were designed with terrestrial systems in mind). I repeat this set of criteria in Appendix 2.

In short – Representativeness – I consider that the feature does represent well a saline (normally estuarine situation) wetland plant community which can be simple in species richness as this one. It is characteristic of and typical of such indigenous dominated saline plant communities. It is also likely that the community present is underrepresented spatially (<30% remaining) regionally.

Rarity – There are no rare or threatened plant species in this community. The feature itself however, might be considered "rare" or threatened by a reduced abundance.

Diversity – the feature does have a natural diversity of species, and physical features.

Context – the feature is too small and isolated to form the connectivity or habitat conditions of this criteria.

It is likely that the feature does meet at least three of the criteria, making it a 'significant' natural area.

It is however, a very small community and in an unusual setting for a salt marsh and is not of any particular habitat value for fauna. It is clearly however, persistent and viable.

3.5 NZ CPS (2010)

The NZ CPS through policy 11 seeks to protect indigenous biological diversity in the coastal environment. I note that it is not an identification method for wetlands but a process to consider the protection of ecological features in the coastal environment.

Two parts of the policy apply to the wetland feature: 11(a) – avoid adverse effects where:

A(iii) indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare,

[3] Stevens L. & Forrest, B. 2020. Broad Scale intertidal habitat mapping of Te Awarua-o-Porirua Harbour. A Salt Ecology Report ofr GWRC October 2020 (Porirua-Harbour-broad-scale-monitoring-2020.pdf (gw.govt.nz).)

And

11 b – avoid significant adverse effects where:

b(i) areas of predominantly indigenous vegetation in the coastal environment;

I consider both of these policy requirements are met.

3.6 The PNRP (2022)

As noted, the PNRP current version, while it removed reference to saltmarsh in the definitions, does not exclude inclusion of a natural wetland in the CMA or make reference to freshwater wetland only. I note that this site does not seem to be included in the PNRP schedule F4 (Sites of significant biological diversity values in the coastal marine area). Saltmarsh is referenced in Schedule 5 (Habitats with significant indigenous biodiversity values in the coastal marine area) and the feature is a salt marsh community although not as described in Schedule 5 (”grow in the upper margins of most NZ estuaries”). Therefore, it would seem that the PNRP does include this natural saline wetland.

3.7 The NPS FM (2020)

This policy only refers to inland freshwater wetlands and therefore excludes consideration of wetlands in the CMA. I consider that half the feature (technically) is within the CMA and half is a natural “inland” wetland therefore technically I assume the NPS FM can apply to half the feature – which ecologically is absurd.

3.8 The NES FM (2020)

This document only talks about natural wetlands. It does not reference inland freshwater or saline or CMA just about natural wetlands and so therefore it would seem that the NES FM (2020) does apply to this feature.

4.0 Effects

The feature has been present for at least the last 20 years and I suggest since at least the 1970’s. Prior to around 1989 the discharge was not treated but also the volume was less than today - and so the feature is likely to have been present under a range of “contaminant” concentrations. That process has not removed or caused any obvious vegetation quality issue. The terrain does not suggest that the feature should be greater in extent and is not because of any issue.

Having examined the outfall location and this feature it seems clear to me that the concrete barrier out to the island and then another between the larger and smaller island south generally precludes the direct movement of treated wastewater into the wetlands bay except at high tide when there is a strong southerly swell (Figure 1). Treated wastewater is forced south and out and into the north-south tidal stream.

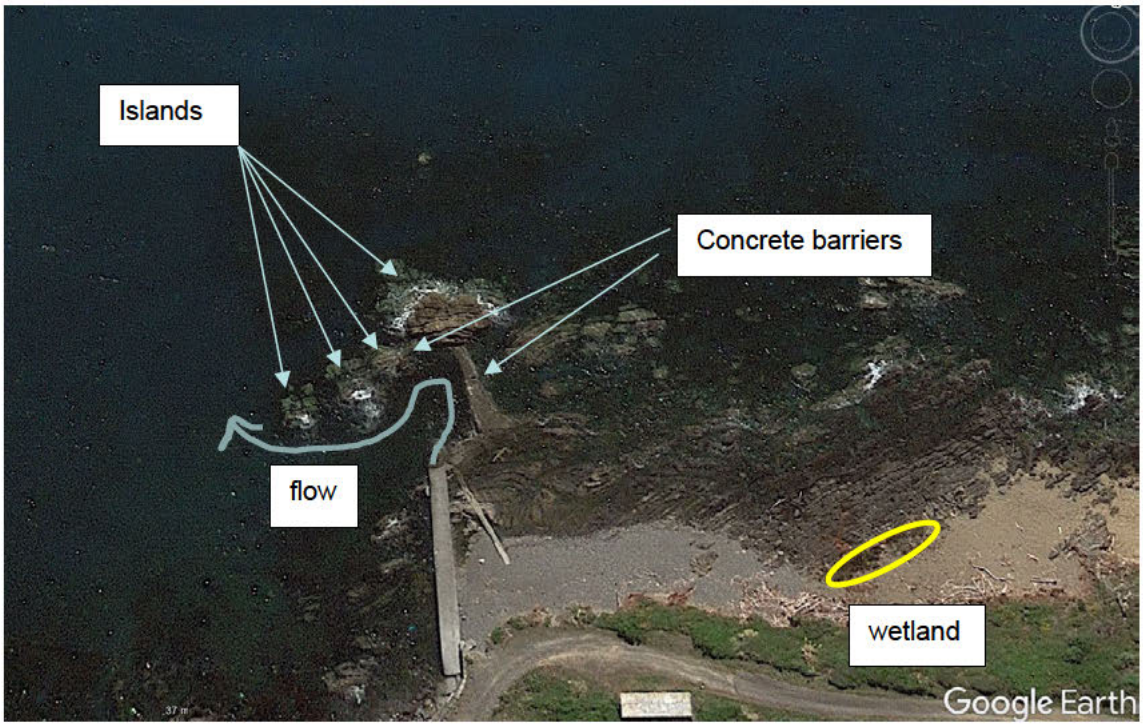


Figure 1. Barriers and out fall predominant flow

There would have to be a set of events related to water movement and wind that would allow the wastewater (diluted in the ocean) to escape around the island and barriers, travel north and then be driven back east and south into the bay and then at a high tide be washed up into the lower half of the wetland. This seems an unlikely (or infrequent) set of circumstances. More likely is that the diffuse (and highly diluted) general ocean water is periodically moved into the lower wetland at high tide.

In which case it is unlikely that there is sediments related to the out fall, indeed there is no evidence in the wetland of sedimentation.

Plants, as opposed to animals are not typically harmed by faecal matter or bacteria of human waste in and of itself; they do not suffer intestinal toxicity from *E. coli* for example. The only potential adverse effect is related to a nutrient boost (nitrogen products in the main, and ammonia of those products) where such a boost was greater than the plants' tolerance. Too much nutrient present in the environment, however, is usually simply not used by the plant, but it could be the cause of competition (weeds etc). Some research suggests root biomass growth slows but foliage biomass increases with eutrophication in salt marsh (Alldred et al 2010)[4]). Otherwise, excessive elemental nitrogen in the soil can cause, by osmosis, water depletion from the plant while leaving salts behind. As a result, some leaves can take on a burnt look from dehydration. However, that is not the usually the case in saline plants who are adapted for just that situation and this effect is not seen. Generally, a periodic and occasional nutrient boost will not be adverse, and based on my observations on site there was no sign of problematic algae or sewage fungi in this case.

Dudley & Shima (2010)[5] looked at water quality and the detection of sewage by measures on the coast of Titahi Bay (including areas about the wetland). While they were examining submerged kelp N and C and invertebrates they determined that Nitrogen uptake was greatest

[4] Alldred, M; Liberti, A; Baines, S. 2010. Impact of salinity and nutrients on salt marsh stability. Ecosphere 8(11): e02010

[5] : Bruce D Dudley & Jeffrey S Shima (2010) Algal and invertebrate bioindicators detect sewage effluent along the coast of Titahi Bay, Wellington, New Zealand, New Zealand Journal of Marine and Freshwater Research, 44:1, 39-51,

in the kelp nearest the outfall which dropped away quickly but that there was no harmful effect. They determine that the kelp was not a good indicator of sewage. Their research supports my opinion that the oioi -sea primrose-remuremu will only benefit and not be adversely affected should increased nutrient reach the wetland.

The wetland currently looks healthy.

I understand that the average discharge rates are predicated to increase from 306 L/s in 2018 to 440 L/s in 2043, and that the treatment of this discharge is unlikely to be better and may be poorer because of volume. These changes (remembering that the discharge is diluted in the ocean and then has a long circuitous route to the wetland and then only introduced to the wetland twice a day for less than an hour each time) will not impact directly than it does now. The increase, when considered against all of the mitigating factors, is tiny and the plant material still has its barriers and mechanisms to manage the nutrient and salinity etc of its environment.

For all the reasons set out above I cannot see how the future discharge (even if with more contaminant and at a greater volume (but still diluted enormously by the ocean)), could adversely affect this natural wetland feature.

I further understand that monitoring of the wetland has been proposed, however, I suggest firstly that monitoring is not needed (the risk of adverse effects is near zero, if not zero). The second, and also salient point, is that it would not be possible to implement a monitoring regime that could inform one of the discharge's direct effect to the feature. It would be near impossible to prove that a changed level of nutrient delivered by the wastewater outfall was responsible for a die back of the oioi (or other vegetation change), if it occurred, rather than some other factor (such as increased exposure due to climate change) being responsible. A general condition measure of the heath of the wetland will mean nothing in terms of causes of change if change was detected.

Sediment impact.

As with the discussion on nutrients and other wastewater contaminants, suspended sediments also have a long and unlikely journey to reach the wetland. I understand from Mr Cameron's evidence that TSS (which can loosely be translated as the amount of suspended sediment) discharged typically will be around 6 g/m^3 (0.006/L) (currently consented for a geometric mean of 30 g/m^3). But that at unusual flow times the discharge might rise to 104 g/m^3. These are very low amounts of suspended sediments (TSS). Freshwater systems under rain events in Porirua (data from TG monitoring) typically include sediment in solution (TSS) from 300 to 3000 (g/m^3)[6]. The lower end of these rain events had no impacts at all on any monitoring aquatic or wetland system receiving them because this was not enough material where deposition occurred, to smoother entirely any plant or fish. Even the 104 g/m3 upper limit predicted from the wastewater discharge, if it was collected in one place would not be enough to cover any kind of substantial area to any kind of meaningful effect depth.

None of this considers that the solids in solution in the discharge, once that energy of release has occurred, will drop out of suspension fairly quickly (10's of meters from the discharge point the larger sediment particles will fall, due to gravity, to the bed and become fairly well contained to the bed and a few centimetres above the bed where the ocean swell is normal). Furthermore, the smaller suspended particles will form bonds with other suspended particles and become larger and so drop out of suspension also. Then that discharge (that quantum which has not dropped out of the water column) has to have occurred at a high tide (to perhaps breach the concrete barrier – which in itself will stop most suspended sediment movement) and that there be a long shore drift from the south to north, and a push of a westerly wind to move suspended

[6] See also Hughes, Quinn, McKergrow (2012) Land use influences on suspended sediment yields and event sediment dynamics within two headwater catchments, Waikato, New Zealand, New Zealand Journal of Marine and Freshwater Research, 46:3, 315-333

material towards the wetland (some 70m distance). That material must reach the wetland (still in suspension) before the tide turns. There are only two high tides a tide of around 1 hour each). This is a sequence of events that must occur together when a discharge is more than the typical making it a very rare event (if it could even occur) that any suspended sediment from the discharge ever actually deposits on the wetland in the CMA. Furthermore, there may be suspended sediments stirred from the bottom under storm conditions driven on to the coast and that seabed sediment will have come for numerous sources including out of Porirua harbour and there would be no way of telling the source of any such suspended sediment deposition in the wetland.

As I have stated, I did not see any evidence of such deposits during my survey in the wetland and I think it sufficiently rare and of such low quantity, without any way of guaranteeing the source, that a sediment discharge from the waste water to the wetland should be considered as never occurring.

5.0 Conclusion

The feature is a small (2m by 20m linear) saline natural wetland. It is 50% above and 50% below mean hide springs. It is in a gravel and cobble substrate with no evidence of sewage fungi, slimes or sediments. It is around 70m from the outfall pipe and 60m north of the concrete barrier.

It is a ‘significant’ and under-represented (rare / threatened) wetland (in terms of the planning tests) and therefore protected under the regional plan (PNRP) and the New Zealand Coastal Policy Statement policy 11.

The NPS FM partially addresses this wetland. In addition, as the NES FM (20920) is not limited to the “inland” or freshwater component of wetland, it addresses (one has to assume all) “natural wetlands”.

There will, however, be no adverse effects because of the treated wastewater discharge. This is because of where that discharge is and how much of it, how often that might come in to contact with around 50% of the feature.

Even where a highly diluted form of the treated wastewater did come into contact with the feature only the nutrient component is likely to have any effect and that effect is most likely beneficial (as useful nutrient).

Dr Vaughan Keesing

Senior Ecologist

Boffa Miskell ltd

30.08.2022.

Appendix 1: Method Description

The proposed method for this assessment :

1. View the site in retrolens and look for evidence in the literature of its presence historically.
2. Go to site and view form a vantage point the feature in question (photograph)
3. Determine the heterogeneity of the vegetation, are there 1 or more distinct vegetation communities – roughly map the feature and communities.
4. Check the context and note wider aspects - is the topography and visually present hydrology suggestive of potential wetland?
5. Are there unusual circumstances or effects in play on or influencing the feature?
6. Enter and rapidly assess the vegetation cover dominance and classification (FACU through toOBL (where dominance of FACW and OBKL indicates wetland likely)) -can it be clearly determined to be wetland or dryland?
7. If it cannot be determined- select representative plot positions in each of the identified vegetation communities, several may be required if the communities are variable in cover, record this variability if present.
8. Undertake plot/s placement and species cover percentage cover estimates
9. Apply the wetland dominance test,
10. Using the data and context test natural wetland exclusions
11. If result still ambiguous use the other indicators (noting that given the situation soil cores or soil testing for hydric (in CMA) may not be available or applicable to test.
12. Lastly utilise the prevalence indices.
13. Conclude if a natural wetland under the PNRP and / or the NPS FM
14. Test for significance under policy 23 of the GWRC RPS.
15. Utilise this result to examine NZCPS policy 11 applicability.
16. Use literature, research and similar effects records from experience to determine the likelihood of adverse effects related to the proposed discharge (water level, sedimentation, contaminants), Consider future state up to 2043 and consider also climate change effects.

Relevant policies and protocols

GWRC PNRP (Appeals version 2022)

A natural wetland is - a permanently or intermittently wet area, shallow water and land water margin that supports a natural ecosystem of plants and animals that are adapted to wet conditions, including in the beds of lakes and rivers, the coastal marine area (e.g. saltmarsh), and groundwater-fed wetlands (e.g. springs).

Here the PNRP does not distinguish wetland in the CMA as separate as does the NPS FM (2020)

Natural wetlands do not include:

(a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing former natural wetland); or

(b) a geothermal wetland; or

(c) any area of improved pasture that, at 3 September 2020, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain derived water pooling.

In the case of uncertainty or dispute about the existence or extent of a natural wetland, a regional council must have regard to the Wetland Delineation Protocols available at https://environment.govt.nz/publications/wetland-delineation-protocols/. This is the Clarkson (2013, 2018) wetlands delineation process also now include din the NPS FM (2020) as MfE wetland delineation protocol (2020).

The definition of a wetland in New Zealand is outlined in the RMA (Resource Management Act, 1991):

"Wetland includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions"

A 'Natural Wetland' is defined in the NPS-FM using the same definition as 'Wetland' in the RMA, but with the following exclusions:

(a) A wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former Natural Wetland); or

(b) A geothermal wetland; or

(c) Any area of improved pasture that, at the commencement sate, is dominated by (that is more than 50 per cent of) exotic pasture species and is subject to temporary rain-derived water pooling.

A revised definition of the exclusions is proposed by MfE (but not yet confirmed) in the Exposure Draft of the NPS-FM. The anticipated date for confirmation of these changes is around November 2022. The proposed changes are below:

(a) a deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural wetland as part of giving effect to the effects management hierarchy; or

(b) a wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or

(c) a geothermal wetland; or

(d) a wetland that:

(i) is within an area of pasture; and

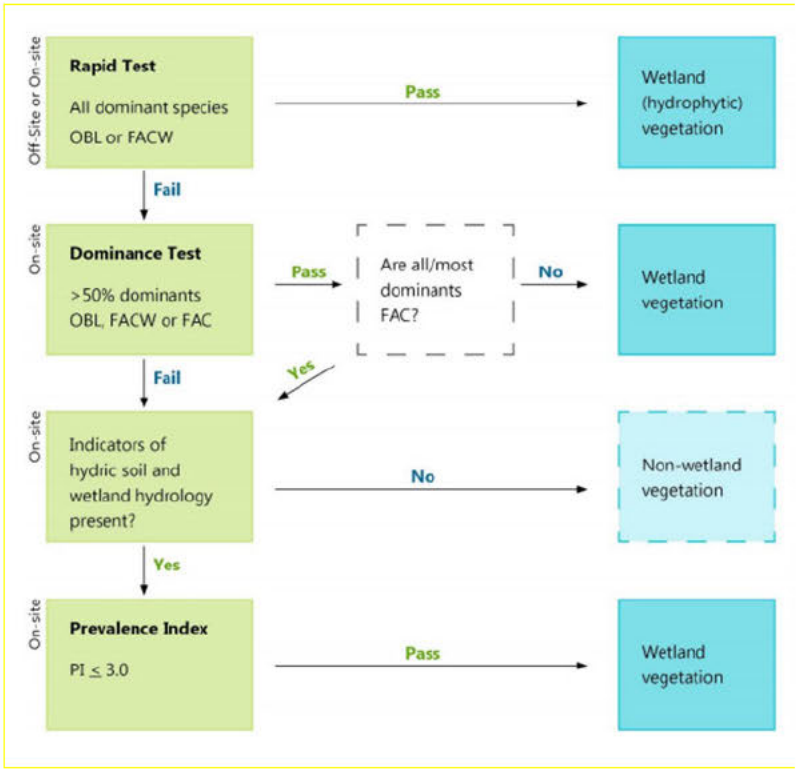
(ii) has ground cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species (see clause 1.8)); and

(iii) is not known to contain threatened species

"**Natural inland wetland**" also means a natural wetland that is not in the coastal mariner area (CMA).

Natural wetland assessment

The below flow chart, published in the wetland delineation protocols (Ministry for the Environment, 2020) outlines the pathway for identifying natural wetlands. However, this does not incorporate initial exclusions from the policy definitions (pasture coverage), so a Pasture Test is carried out following the Rapid Test to determine if the exclusion is met.



The procedure for determining natural wetland status is carried out by establishing broad vegetation communities of a feature and the outer boundaries of a feature and then rapidly visually assessing the dominant species in the communities of the feature, using topography (and hydrology) to assist with these broad areas. Once these areas are identified, three tests (Pasture test, Dominance Index, and Prevalence Index) are conducted to determine wetland viability or otherwise. These tests require at least one representative 2 x 2 m vegetation plot in each established community, whereby the percent cover of all species within the plot is estimated (based on above-ground live biomass). Locations of areas and the delineations which resulted from this are identified in Figure 1.

Each vegetation species identified within a 2 x 2 m vegetation plot is allocated to a prescribed category based on its degree of affinity for water, as described by Clarkson (2013). These categories are:

- **OBL**: Obligate. Almost always is a hydrophyte, rarely in uplands (estimated probability >99% occurrence in wetlands)
- **FACW**: Facultative Wetland. Usually is a hydrophyte but occasionally found in uplands (estimated probability 67–99% occurrence in wetlands)

- **FAC**: Facultative. Commonly occurs as either a hydrophyte or non-hydrophyte (estimated probability 34–66% occurrence in wetlands)
- **FACU**: Facultative Upland. Occasionally is a hydrophyte but usually occurs in uplands (estimated probability 1–33% occurrence in wetlands)
- **UPL**: Obligate Upland. Rarely is a hydrophyte, almost always in uplands (estimated probability <1% occurrence in wetlands)

These categories, in conjunction with percent cover estimates from each plot, feed into the resulting Pasture Test, Dominance Index and Prevalence Index results:

Pasture Test

A Pasture Test considers that if a plot is more than 50% covered in pasture species, it is not considered a "natural wetland", irrespective of the Prevalence/Dominance outcomes, and no further testing is required, as the area meets the natural wetland exclusion definition. It is noted that 'pasture' is currently undefined, but the draft exposure of the NPS-FM provides a restricted list of species which are likely to be the only species considered to be 'pasture' once the draft exposure changes are made, and those have been used in this report.

Dominance Index

This test ascertains the "dominant" species following a 50/20 rule, whereby all species are ranked according to their percentage cover, and the highest covering species are sequentially selected until cumulative coverage exceeds 50%. Any other species which comprise at least 20% coverage are also selected. If more than 50% of the dominant species are OBL, FACW, or FAC species, then the "Dominance Test" threshold is met and the area is considered a natural wetland. However, if there is a large FAC species presence, a Natural Wetland status is assigned with caution. In such a case, hydric soil indicators are used using guidance from the hydric soils guide (Fraser et al., 2018), followed by a Prevalence Test (described below) if further ambiguity is present.

Hydric soils

Hydric soils are considered in ambiguous scenarios, whereby soil is observed to a depth and features typical of hydric soils (e.g. iron mottling, peat, gleying) are noted to aid with wetland determination.

Prevalence Index

Using the vegetation plot percent cover data, a Prevalence Index Score is calculated for each plot. Mathematically, this score must fall between 1 and 5, with 1 indicating entirely wetland species (OBL), and 5 indicating entirely upland species (UPL). A score below 3 is indicative of a wetland/hydrophilic community, though Clarkson (2013) cautions that a score between 2.5 and 3.5 is not reliable for determining a hydrophilic community on vegetation measures alone.

Appendix 2 – Policy 23 criteria from the GWRC operative RPS

District and regional plans shall identify and evaluate indigenous ecosystems and habitats with significant indigenous biodiversity values; these ecosystems and habitats will be considered significant if they meet one or more of the following [ecological] criteria.

Representativeness: the ecosystems or habitats that are typical and characteristic examples of the full range of the original or current natural diversity of ecosystem and habitat types in a district or in the region, and:

(i) are no longer commonplace (less than about 30% remaining); or

(ii) are poorly represented in existing protected areas (less than about 20% legally protected).

(b) Rarity: the ecosystem or habitat has biological or physical features that are scarce or threatened in a local, regional or national context. This can include individual species, rare and distinctive biological communities and physical features that are unusual or rare.

(c) Diversity: the ecosystem or habitat has a natural diversity of ecological units, ecosystems, species and physical features within an area.

(d) Ecological context of an area: the ecosystem or habitat:

(i) enhances connectivity or otherwise buffers representative, rare or diverse indigenous ecosystems and habitats; or

(ii) provides seasonal or core habitat for protected or threatened indigenous species.

Appendix 3 – Policy 11 NZCPS (2010)

To protect indigenous biological diversity in the coastal environment:

a. avoid adverse effects of activities on:
    i. indigenous taxa[4] that are listed as threatened[5] or at risk in the New Zealand Threat Classification System lists;
    ii. taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;
    iii. indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare[6];
    iv. habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;
    v. areas containing nationally significant examples of indigenous community types; and
    vi. areas set aside for full or partial protection of indigenous biological diversity under other legislation; and
b. avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:
    i. areas of predominantly indigenous vegetation in the coastal environment;
    ii. habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;
    iii. indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;
    iv. habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;
    v. habitats, including areas and routes, important to migratory species; and

vi. ecological corridors, and areas important for linking or maintaining biological values identified under this policy.

Appendix B: Assessment of the Porirua WWTP wastewater discharge against the wetland regulations of NES-F and related objectives and policies

Stantec

Memo

To:	Ezekiel Hudspith	From:	Richard Peterson
	Dentons Kensington Swan		Wellington
Project/File:	Porirua WWTP Resource Consent Application	Date:	10 October 2022

Reference: Assessment of the Porirua WWTP wastewater discharge against the wetland regulations of NES-F and related objectives and policies

Summary of NES-F assessment included in attachments

Attachment A to this memo includes my assessment against regulations 46, 47 and 55 of the National Environmental Standards for Freshwater (NES-F). In this assessment I have concluded, taking a conservative approach with regard to regulations 55(3)(e) and 55 (10), that the discharge of treated wastewater from the outfall at Rukutane Point requires resource consent under regulation 47(3) of the NES-F as a restricted discretionary activity.

The matters to which discretion is restricted for this resource consent application are set out in regulation 56 of the NES-F. I comment on each of these matters in Appendix B to this memo. In summary I consider that these matters of discretion are adequately addressed in the assessment prepared by Dr Keesing and the material previously submitted in support of the application, or are otherwise not relevant to the particulars of this application.

In Attachment C to this memo, I assess the additional objectives and policies in the NZ Coastal Policy Statement, NPS-FM, and pNRP relevant to the potential effects of the discharge on the natural wetland, and which had not previously been addressed in the application or my hearing evidence. Relying on Dr Keesing's technical assessment I conclude that the discharge is consistent with the relevant 'wetland' provisions.

This memo and attachments refer to, and should be read together with, the report dated 30 August 2022 prepared by Dr Keesing.

Consideration of potential additional pNRP consent triggers

For completeness, I have considered whether the existence of the wetland triggers any further consent requirements under the pNRP. I do not consider this to be the case.

Rule R65[1] provides for all wastewater discharges into coastal water, including where the receiving environment (coastal water) includes a site of significance. Consent has been sought in relation to this rule. While Rule R93 relates to discharges to sites of significance, the rule excludes those discharges provided for under other rules (such as Rule R65) and also does not capture discharges to Schedule F5 sites. Mr Keesing has identified that it is Schedule F5 that applies to the wetland.

[1] previously numbered R61

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

Finally, I note that Rule R235, within pNRP 'Section 5.6 – Coastal Management', relates to 'destruction, damage, disturbance or deposition inside sites of the significance'. Given:

1. the structure of the pNRP, with a specific discharge rule section (i.e. section 5.2), and
2. the general premise that the provision that is more specific to the activity applies

I do not consider that this rule applies to the proposed discharge.

Regards,

Stantec New Zealand

Richard Peterson
Senior Principal Planner

Attachment A: Assessment against the wetland regulations of NES-F

NES-F clause	Assessment
46 Permitted activities (1) Vegetation clearance within, or within a 10 m setback from, a natural wetland is a permitted activity if it— (a) is for the purpose of maintaining or operating specified infrastructure or other infrastructure; and (b) complies with the conditions. (2) Earthworks or land disturbance within, or within a 10 m setback from, a natural wetland is a permitted activity if it— (a) is for the purpose of maintaining or operating specified infrastructure or other infrastructure; and (b) complies with the conditions. (3) The taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland is a permitted activity if it— (a) is for the purpose of maintaining or operating specified infrastructure or other infrastructure; and (b) complies with the conditions.	I consider that the discharge falls within the meaning of a 'discharge of water' under the NES-F. I understand that the discharge occurs 'within a 100 m setback from a natural wetland'. The wetland in question appears to be partly within the CMA, but I do not consider that changes the application of the NES regulations. The discharge is for the purpose of operating specified infrastructure. Therefore, the discharge may be a permitted activity under the NES-F, subject to compliance with the specified conditions. I assess the specified conditions in the following rows of this table.
(4) the conditions are that -	
(a) the activity must comply with the general conditions on natural wetland activities in regulation 55 (but regulation 55(2), (3)(b) to (d), and (5) do not apply if the activity is for the purpose of maintaining or operating hydro-electricity infrastructure); and	I assess the discharge against the general conditions in regulation 55 below.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
(b) the activity must not be for the purpose of increasing the size of the specified infrastructure or other infrastructure; and	The discharge is not for the purpose of increasing the size of the specified infrastructure.
(c) the activity must not result in the formation of new pathways, boardwalks, or other accessways; and	The discharge will not result in the formation of new pathways, boardwalks or other accessways.
(d) if the activity is vegetation clearance, earthworks, or land disturbance, the activity must not occur over more than 500 m2 or 10% of the area of the natural wetland, whichever is smaller; and	The activity does not involve vegetation clearance, earthworks, or land disturbance, and therefore this clause does not apply.
(e) if the activity is earthworks or land disturbance,— (i) trenches dug (for example, to maintain pipes) must be backfilled and compacted no later than 48 hours after being dug; and (ii) the activity must not result in drains being deeper, relative to the natural wetland's water level, than they were before the activity.	The activity does not involve earthworks or land disturbance, and therefore this clause does not apply.
55 General conditions on natural wetland activities (1) This regulation applies if a regulation in this subpart refers to the compliance of an activity with the general conditions in this regulation.	Clause 46 (4) (a) requires compliance with the general conditions in clause 55.
(2) If this regulation applies in relation to a permitted activity, the 1 or more persons responsible for undertaking the activity must, at least 10 working days before starting the activity, provide the relevant regional council with the following information in writing: (a) a description of the activity to be undertaken; and (b) a description of, and map showing, where the activity will be undertaken; and (c) a statement of when the activity will start and when it is expected to end; and	In relation to an existing activity that is being re-consented, as in this case, I consider that the reasonable interpretation of the phrase '*before starting the* activity' is before the commencement of the new consent. I consider that information required by sub-clause (2) was provided to the regional council in the application submitted in April 2020 or, to the extent that it was not, has now been provided in Dr Keesing's report. Therefore, this sub-clause has been met.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
(d) a description of the extent of the activity; and (e) their contact details.	
(3) The general conditions relating to water quality and movement are as follows:	
(a) the activity must not result in the discharge of a contaminant if the receiving environment includes any natural wetland in which the contaminant, after reasonable mixing, causes, or may cause, 1 or more of the following effects: (i) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials: (ii) a conspicuous change in colour or visual clarity: (iii) an emission of objectionable odour: (iv) the contamination of freshwater to the extent that it is not suitable for farm animals to drink: (v) adverse effects on aquatic life that are more than minor; and	The assessment from Dr Keesing does not identify the potential for any of the adverse effects identified in sub-clause (3) (a) to arise from the discharge at the location of the wetland. Dr Keesing concludes that there will be no adverse effects on the wetland because of the discharge. However notwithstanding the conclusion with regard to these effects, I note that the wetland is within the currently proposed 200 m zone of reasonable mixing for the discharge[2]. Therefore, even if the effects in sub-clauses (i) to (v) were to occur within the wetland as a result of the discharge, the discharge would still comply with clause (a). I therefore consider that the discharge complies with this general condition.
(b) the activity must not increase the level of flood waters that would, in any flood event (regardless of probability), inundate all or any part of the 1% AEP floodplain (but see subclause (4)); and	The discharge will not increase the level of flood waters.

[2] I note that the size of the reasonable mixing zone is the subject of on-going expert conferencing and an eventual decision from the hearing panel. The wetland is approximately 70 m from the outfall.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
(c) the activity must not alter the natural movement of water into, within, or from any natural wetland (but see subclause (5)); and	The natural movement of water into the wetland, either from wave action or tidal movement, or surface or ground water movement from the landward side of the wetland will not be altered by the discharge.
(d) the activity must not involve taking or discharging water to or from any natural wetland (but see subclause (5)); and	The discharge is to the CMA within a 100 m setback from the natural wetland but is not directly to the natural wetland; any treated wastewater from the discharge that may reach the wetland will be carried there by the wave action or tidal movement, not the discharge itself. Accordingly, I consider the discharge complies with this condition.
(e) debris and sediment must not— (i) be placed within a setback of 10 m from any natural wetland; or (ii) be allowed to enter any natural wetland.	With respect to sub-clause (e) (i), the discharge does not 'place' debris or sediment within a 10 m setback from the natural wetland. With respect to whether sediment from the discharge enters the natural wetland, Dr Keesing has concluded that any such events are likely to be rare and of such low quantity that *'a sediment discharge from the wastewater to wetland should be considered as never occurring*'. I am aware that the Ministry for the Environment has stated that it was the intent of subclause 55 (3) (e) to regulate the

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
	placement of sediment in proximity to a wetland, not to regulate the incidental sediment effects arising from other activities. I understand that these other effects of sediment were intended to be regulated under clause 55 (3) (a), already discussed. The Ministry has proposed redrafting sub-clause (e) to clarify this point[3], however as yet this change has not come into effect. **I consider that applying a literal (and conservative) interpretation of the current wording means that any discharge of sediment, even one that is '*rare and of such low quantity*' as Mr Keesing has characterised the proposed discharge to likely be, is not consistent with (e) (ii) and therefore the activity does not meet the requirements for a permitted activity.**
(4) Subclause (3)(b) does not apply if the person undertaking the activity— (a) owns or controls the only land or structures that would be affected by a flood in all or any part of the 1% AEP floodplain; or (b) has— (i) obtained written consent to undertaking the activity from each person who owns or controls the land or structures that would be affected by a flood in all or part of the 1% AEP floodplain, after	The criteria (i.e. clauses 4 (a) and (b)) for the exemption from clause (3) (b) are not met. However as above I consider that clause 3(b) would be complied with in any event, if it applies.

[3] Ministry for the Environment. 2022. *Managing our wetlands: Policy rationale for exposure draft amendments 2022*. Wellington: Ministry for the Environment.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
informing them of the expected increase in the level of flood waters; and (ii) satisfied the relevant regional council that they have complied with subparagraph (i).	
(5) Despite subclause (3)(c) and (d), the temporary taking, use, damming, or diversion of water around a work site, or discharges of water into the water around a work site, may be undertaken if the following conditions are complied with: (a) the activity must be undertaken during a period when there is a low risk of flooding; and (b) the activity must be undertaken only for as long as necessary to achieve its purpose; and (c) before the activity starts, a record must be made (for example, by taking photographs) of the original condition of any affected natural wetland's bed profile and hydrological regime that is sufficiently detailed to enable compliance with paragraph (d) to be verified; and (d) the bed profile and hydrological regime of the natural wetland must be returned to their original condition no later than 14 days after the start of the activity; and (e) if the activity is damming, the dam must be no higher than 600 mm; and (f) if the activity is a diversion that uses a pump, a fish screen with mesh spacing no greater than 3 mm must be used on the intake.	I consider that this clause does not apply to the activity as it is not a discharge of water into water around a work site.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
(6) In subclauses (3) and (4), 1% AEP floodplain means the area that would be inundated in a flood event of a size that has a 1% or greater probability of occurring in any one year.	I consider this clause is not relevant to this discharge.
(7) The general condition relating to earth stability and drainage is that the activity must not create or contribute to— (a) the instability or subsidence of a slope or another land surface; or (b) the erosion of the bed or bank of any natural wetland; or (c) a change in the points at which water flows into or out of any natural wetland; or (d) a constriction on the flow of water within, into, or out of any natural wetland; or (e) the flooding or overland flow of water within, or flowing into or out of, any natural wetland.	Taking account of Dr Keesing's assessment, I consider the discharge will not create or contribute to any of the factors listed in clause (7).
(8) The general conditions on earthworks, land disturbance, and vegetation clearance are as follows: (a) during and after the activity, erosion and sediment control measures must be applied and maintained at the site of the activity to minimise adverse effects of sediment on natural wetlands; and (b) the measures must include stabilising or containing soil that is exposed or disturbed by the activity as soon as practicable after the activity ends; and (c) the measures referred to in paragraph (b) must remain in place until vegetation covers more than 80% of the site; and	The activity does not involve earthworks, land disturbance, or vegetation clearance.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
(d) if the activity is vegetation clearance, it must not result in earth remaining bare for longer than 3 months.	
(9) The general conditions relating to vegetation and bird and fish habitats are as follows: (a) only indigenous species that are appropriate to a natural wetland (given the location and type of the natural wetland) may be planted in it; and (b) the activity must not result in the smothering of indigenous vegetation by debris and sediment; and (c) the activity must not disturb the roosting or nesting of indigenous birds during their breeding season; and (d) the activity must not disturb an area that is listed in a regional plan or water conservation order as a habitat for threatened indigenous fish; and (e) the activity must not, during a spawning season, disturb an area that is listed in a regional plan or water conservation order as a fish spawning area.	Taking account of Dr Keesing's assessment, I consider that the activity is consistent with this clause.
(10) The general condition relating to historic heritage is that the activity must not destroy, damage, or modify a site that is protected by an enactment because of the site's historic heritage (including, to avoid doubt, because of its significance to Māori), except in accordance with that enactment. (11) In subclause (10), enactment includes any kind of instrument made under an enactment.	In assessing this clause, I have taken advice from staff at Te Rūnanga o Tao Rangatira. I understand that Ngāti Toa consider the wetland to be an element of the wider Te Moana o Raukawa setting. Te Moana o Raukawa (Cook Strait) is identified as a Taonga Nui a Kiwa under the pNRP and is also identified as a 'Coastal statutory area' under the Ngāti Toa Rangatira Claims Settlement Act 2014 ('the Settlement Act').

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
	Arguably the pNRP provisions relating to Ngā Taonga Nui a Kiwi and the Settlement Act provide for the protection of Raukawa Moana, although I note neither the pNRP provisions or the Settlement Act explicitly use this term. It is evident from the assessment provided by Ngāti Toa as part of the application and at the hearing that the values of significance of Te Moana o Raukawa have been and will continue to be modified or damaged by the discharge. **Therefore, a conservative interpretation *could* conclude that the discharge does not comply with sub-clause (10).** I also note that subclause (10) provides an exception to activities that are 'in accordance with the enactment'. I am unclear what this phrase means with respect to an activity for which resource consent is obtained under regional plan rules. Finally, I note that because the need for resource consent has already been triggered under sub-clause 3 (e) and that the range of permitted activity conditions not complied with has no bearing on the matters of discretion for the resource consent, this is an academic consideration in this particular case.
(12) The general conditions on the use of vehicles, machinery, equipment, and materials are as follows:	The activity does not involve the use of vehicles, machinery, equipment and materials within the natural wetland.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

NES-F clause	Assessment
(a) machinery, vehicles, and equipment used for the activity must be cleaned before entering any natural wetland (to avoid introducing pests, unwanted organisms, or exotic plants); and (b) machinery that is used for the activity must sit outside a natural wetland, unless it is necessary for the machinery to enter the natural wetland to achieve the purpose of the activity; and (c) if machinery or vehicles enter any natural wetland, they must be modified or supported to prevent them from damaging the natural wetland (for example, by widening the tracks of track-driven vehicles or using platforms for machinery to sit on); and (d) the mixing of construction materials, and the refuelling and maintenance of vehicles, machinery, and equipment, must be done outside a 10 m setback from any natural wetland.	
(13) The other general conditions are as follows: (a) the activity must be undertaken only to the extent necessary to achieve its purpose; and (b) the activity must not involve the use of fire or explosives; and (c) if there is existing public access to a natural wetland, the activity must not prevent the public from continuing to access the natural wetland (unless that is required to protect the health and safety of the public or the persons undertaking the activity); and (d) no later than 5 days after the activity ends,—	With respect to these sub-clauses I note that: • The activity (discharge) is for the purpose of operating specified infrastructure and will only be undertaken to the extent necessary for this purpose • The activity does not involve the use of fire or explosives • The activity does not prevent access to the wetland, if it currently occurs • Sub-clause (d) is not relevant to this activity. Given these points I consider that the activity complies with sub-clause (13).

NES-F clause	Assessment
(i) debris, materials, and equipment relating to the activity must be removed from the site; and (ii) the site must be free from litter.	
	Based on the assessment above, I consider that the discharge does not meet all general conditions in regulation 55 and therefore must be assessed against regulation 47.
47 Restricted discretionary activities (1) Vegetation clearance within, or within a 10 m setback from, a natural wetland is a restricted discretionary activity if it— (a) is for the purpose of maintaining or operating specified infrastructure or other infrastructure; and (b) does not comply with any of the conditions in regulation 46(4). (2) Earthworks or land disturbance within, or within a 10 m setback from, a natural wetland is a restricted discretionary activity if it— (a) is for the purpose of maintaining or operating specified infrastructure or other infrastructure; and (b) does not comply with any of the conditions in regulation 46(4). (3) The taking, use, damming, diversion, or discharge of water within, or within a 100 m setback from, a natural wetland is a restricted discretionary activity if it— (a) is for the purpose of maintaining or operating specified infrastructure or other infrastructure; and	As noted: • I consider that the discharge falls within the meaning of a 'discharge of water' under the NES-F. • I understand that the discharge occurs 'within a 100 m setback from a natural wetland'. • The discharge is for the purpose of operating specified infrastructure, but as established above it does not comply with all conditions in regulation 46 (4). Further, the discharge is not for the purpose of maintaining or operating hydro-electricity infrastructure. Therefore, the discharge is potentially a restricted discretionary activity under the NES-F, subject to compliance with the conditions in subclause (5). I assess the conditions from subclause (5) in the following rows of this table.

NES-F clause	Assessment
(b) does not comply with any of the conditions in regulation 46(4), but does comply with the conditions in subclause (5) of this regulation. (4) However, the conditions in subclause (5) of this regulation do not apply if the activity is for the purpose of maintaining or operating hydro-electricity infrastructure.	
Conditions (5) The conditions are that—	
(a) the activity must be undertaken only for as long as necessary to achieve its purpose; and	The purpose of the discharge is the on-going operation of the wastewater treatment plant and outfall. Given that the purpose of the discharge is on-going, I consider that a continued discharge is necessary to achieve its purpose. I therefore consider that the proposal meets this condition.
(b) before the activity starts, a record must be made (for example, by taking photographs) of the original condition of the natural wetland's bed profile and hydrological regime that is sufficiently detailed to enable compliance with paragraph (c) to be verified; and	For the purposes of this sub-clause and sub-clause (c), I consider that: • The meaning of phrases 'before the activity starts' and 'the start of the activity' is the commencement of the replacement consent. • The meaning of 'original condition' is the condition as it would exist without the continuation of the discharge Dr Keesing's report includes photographs and a written description of the bed profile and hydrological regime of the wetland. I consider that this 'record' is 'sufficiently detailed'

NES-F clause	Assessment
	given that Dr Keesing concludes that the discharge will have no adverse effects on the wetland. In other words, I consider that the detail of the record provided by Dr Keesing appropriately corresponds with the scale and significance of the effects that the discharge may have on the bed profile and hydrological regime of the wetland.
(c) the bed profile and hydrological regime of the natural wetland must be returned to their original condition no later than 30 days after the start of the activity.	I understand from Dr Keesing's assessment that the discharge does not impact on the bed profile or hydrological regime of the natural wetland. These elements of the wetland are driven by the wave and tidal action of the ocean and run-off or groundwater from the wetlands landward edge. I therefore consider that the bed profile and hydrological regime of the natural wetland meets the 'original condition' and will continue to meet the original condition while the discharge continues (or at least, that any changes from the 'original condition' over time will not be due to the outfall discharge, as compared with other factors). I therefore consider that the discharge complies with this condition.

It is my overall conclusion that the discharge of wastewater is a restricted discretionary activity under regulation 47 (3) of the NES for Freshwater. This is based on my assessment, adopting a conservative approach, that the discharge does not comply with the general conditions in sub-clauses 55 (3) (e) and 55 (10).

Appendix B: Matters to which discretion is restricted under Regulation 56

Regulation 47 (7) restricts the discretion of a consent authority considering an application under Regulation 47 to the matters set out in regulation 56. These matters of discretion apply regardless of what the original 'trigger' for restricted discretionary activity status might have been. The following table identifies those matters and provides commentary in relation to each.

Sub-clause	Commentary
a) the extent to which the nature, scale, timing, intensity, and location of the activity may have adverse effects on— (i) the existing and potential values of the natural wetland, its catchment, and the coastal environment; and (ii) the extent of the natural wetland; and (iii) the seasonal and annual hydrological regime of the natural wetland; and (iv) the passage of fish in the natural wetland or another water body:	Dr Keesing's assessment evaluates the extent to which the activity (the discharge of wastewater) may have adverse effects on the natural wetland. It is his assessment that there will be no adverse effects because of where the discharge is located relative to the wetland and because of how much and how often the discharge comes into contact with the wetland. The effect of the discharge on the wider coastal environment, including its value to Ngāti Toa Rangatira[4], is addressed in the application lodged in April 2020 and in the evidence of various experts at the hearing in June 2022. I provided a summary of the adverse effects of the discharge in paragraphs 10.2 and 10.3 of my evidence in chief.

[4] I note in correspondence, staff at Te Rūnanga o Toa Rangatira have confirmed that the CIA and evidence already provided covers the effects of the WWTP discharge on the wetland feature as part of the wider landscape.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

Sub-clause	Commentary
(b) whether there are practicable alternatives to undertaking the activity that would avoid those adverse effects	A full assessment of alternatives was included in the application lodged in April 2020. While the wetland was not considered in the alternatives assessment, as Dr Keesing has concluded that the discharge has no effect on it, its presence near the outfall would not, in my view, have changed the option selected through the alternatives assessment process.
(c) the extent to which those adverse effects will be managed to avoid the loss of the extent of the natural wetland and its values:	Dr Keesing has concluded that the discharge will have no adverse effects on the wetland. Given this, it is my view that no specific effects management mechanisms are therefore required.
(d) other measures to minimise or remedy those adverse effects:	Dr Keesing has concluded that the discharge will have no adverse effects on the wetland. Given this, it is my view that no measures are therefore required to minimise or remedy adverse effects.
(e) how any of those adverse effects that are more than minor may be offset or compensated for if they cannot be avoided, minimised, or remedied:	Dr Keesing has concluded that the discharge will have no adverse effects on the wetland. Given this, it is my view that there is therefore no need to offset or compensate for adverse effects.
(f) the risk of flooding upstream or downstream of the natural wetland, and the measures to avoid, minimise, or remedy that risk:	There is no risk of flooding upstream or downstream of the wetland as a result of the discharge (if at all).

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Sub-clause	Commentary
(g) the social, economic, environmental, and cultural benefits (if any) that are likely to result from the proposed activity (including the extent to which the activity may protect, maintain, or enhance ecosystems).	The benefits of the proposed activity are set out in section 5.2 of the application lodged in April 2020.

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

Appendix C: Wetland Objectives and Policies

The following table provides an assessment against relevant wetland objectives and policies. Where part of a provision relates to other matters relevant to the application, I have not repeated my assessment from my hearing evidence.

Relevant Provision	Assessment
New Zealand Coastal Policy Statement Policy 11 *To protect indigenous biological diversity in the coastal environment:* *a. avoid adverse effects of activities on:* *i. indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists;* *ii. taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;* *iii. indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare;* *iv. habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;* *v. areas containing nationally significant examples of indigenous community types; and* *vi. areas set aside for full or partial protection of indigenous biological diversity under other legislation; and* *b. avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:* *i. areas of predominantly indigenous vegetation in the coastal environment;*	Dr Keesing's assessment identifies that the wetland falls under Policy 11(a) and 11(b). The most stringent requirement in this policy is to 'avoid' adverse effects on the values identified in 11(a). Dr Keesing's assessment concludes that the discharge will have no adverse effects on the wetland. I therefore consider that the proposal is consistent with Policy 11 of the NZCPS.

ii. habitats in the coastal environment that are important during the vulnerable life stages of indigenous species; *iii. indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;* *iv. habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;* *v. habitats, including areas and routes, important to migratory species; and* *vi. ecological corridors, and areas important for linking or maintaining biological values identified under this policy.*	
National Policy Statement for Freshwater Management[5] Policy 6 *There is no further loss of extent of natural inland wetlands, their values are protected and their restoration is promoted.*	Dr Keesing's assessment concludes that the discharge will have no adverse effects on the wetland. I therefore consider that the discharge is consistent with this policy (insofar as the wetland is a 'natural inland wetland'; Dr Keesing's assessment identifies that approximately 50% of the wetland may be located below mean high water springs so would not fall within this definition).
Natural Resources Plan – Appeals Version Final 2022 Objective O14 *The natural character of the coastal marine area, natural wetlands, and rivers, lakes and their margins is preserved and protected from inappropriate use and development.*	Dr Keesing's assessment identifies that: • The wetland is a natural wetland

[5] I have not directly addressed clause 3.22 as I consider that its requirements are integrated into the pNRP, in particular through Policy P110.

Objective O19 *Biodiversity, aquatic ecosystem health and mahinga kai in fresh water bodies and the coastal marine area are safeguarded such that …* Note: Table 3.7 sets specific objectives for natural wetlands and Table 3.8 sets requirements for coastal waters. Objective O22 *The extent of natural wetlands is maintained or increased, their values are protected, and their condition is restored. Where the values relate to biodiversity, aquatic ecosystem health and mahinga kai, restoration is to a healthy functioning state as defined by Table 3.7.* Policy P30 *Manage the adverse effects of use and development on biodiversity, aquatic ecosystem health and mahinga kai to:* *Hydrology* *(a) maintain or where practicable restore natural flow characteristics and hydrodynamic processes, and the natural pattern and range of water level fluctuations in rivers, lakes and natural wetlands, and* *Water quality* *(b) maintain or improve water quality including to assist with achieving the objectives in Tables 3.4, 3.5, 3.6, 3.7 and 3.8 of Objective O19, and*	• The wetland is a coastal saline wetland and a salt marsh community (Schedule F5 of pNRP) • The wetland has been present under a range of contaminant concentrations and is currently healthy • The discharge will not adversely affect the wetland. Based on Dr Keesing's assessment I consider that it can be determined that the discharge has not and in the future will not: • prevent the preservation or protection of the wetland • prevent the wetland's biodiversity and ecosystem health from being safeguarded • adversely affect the extent or values of the wetland • impact hydrodynamic processes or water levels within the wetland. For these reasons I consider that the discharge is consistent with the relevant 'wetland' provisions in the pNRP (as reproduced in the left-hand column of this table).

Reference: Assessment of the wastewater discharge against the wetland regulations of NES-F and related objectives and policies

Aquatic habitat diversity and quality *(c) maintain or where practicable restore aquatic habitat diversity and quality, including:* *(i) the form, frequency and pattern of pools, runs, and riffles in rivers, and* *(ii) the natural form of rivers, lakes, natural wetlands and the coastal marine area, and* *(d) where practicable restore the connections between fragmented aquatic habitats, and* *Critical habitat for indigenous aquatic species and indigenous birds* *(e) maintain or where practicable restore habitats that are important to the life cycle and survival of indigenous aquatic species and the habitats of indigenous birds in the coastal marine area, natural wetlands and the beds of lakes and rivers and their margins that are used for breeding, roosting, feeding, and migration, and* *Critical life cycle periods* *(f) avoid, minimise or remedy adverse effects on aquatic species at times which will most affect the breeding, spawning, and dispersal or migration of those species, including timing the activity, or the adverse effects of the activity, to avoid times of the year when adverse effects may be more significant, and* *Riparian habitats* *(g) maintain or where practicable restore riparian habitats, and* *Pests* *(h) avoid the introduction, and restrict the spread, of aquatic pest plants and animals1.* <u>Policy P31:</u>	I also note that Policy P110 directs that the loss of extent and values natural wetlands is to be avoided except if the loss arises from, among other things, the operation of specified infrastructure. Therefore, even if the discharge were to cause adverse effects on the wetland these would not automatically need to be avoided.

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Adverse effects on biodiversity, aquatic ecosystem health and mahinga kai shall be managed by: *(a) in the first instance, activities that risk causing adverse effects on the values of a Schedule F ecosystem or habitat, other than activities carried out in accordance with a wetland restoration management plan, shall avoid these ecosystems and habitats. If the ecosystem or habitat cannot be avoided, the adverse effects of activities shall be managed by (b) to (g) below.* *(b) avoiding adverse effects where practicable, and* *(c) where adverse effects cannot be avoided, minimising them where practicable, and* *(d) where adverse effects cannot be minimised, they are remedied, except as provided for in (a) to (g), and* *(e) where more than minor residual adverse effects cannot be avoided, minimised, or remedied, biodiversity offsetting is provided where possible remain, and* *(f) if biodiversity offsetting of more than minor residual adverse effects is not possible, biodiversity compensation is provided, and* *(g) the activity itself is avoided if biodiversity compensation cannot be undertaken in a way that is appropriate as set out in Schedule G3, including Clause 2 of that Schedule.* *In relation to activities within the beds of lakes, rivers and natural wetlands, (e) to (g) only apply to activities which meet the exceptions in Policy P110.* *A precautionary approach shall be used when assessing the potential for adverse effects on ecosystems and habitats with significant indigenous biodiversity values identified in Schedule F.*	

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Policy P34 *Activities in and adjacent to natural wetlands shall be managed to maintain and, where appropriate, restore their condition and their values including:* *(a) as habitat for indigenous flora and fauna, and* *(b) for their significance to mana whenua, and* *(c) for their role in the hydrological cycle including flood protection, and* *(d) for nutrient attenuation and sediment trapping, and* *(e) as a fisheries resource, and* *(f) for recreation, and* *(g) for education and scientific research.* Policy P38 *To protect the indigenous biodiversity values, use and development within the coastal environment shall:* *(a) avoid adverse effects on indigenous biodiversity values that meet the criteria in Policy 11(a) of the New Zealand Coastal Policy Statement (NZCPS) namely:* *(i) indigenous taxa listed as threatened or at risk in the NZ Threat classification system lists or as threatened by the International Union for Conservation of Nature and Natural Resources;* *(ii) indigenous ecosystems and vegetation types in the coastal environment that are threatened or are naturally rare;* *(iii) habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;* *(iv) areas in the coastal environment containing nationally significant examples of indigenous community*	

types; *(v) areas set aside for full or partial protection of indigenous biological diversity under other legislation; and* *(b) avoid significant adverse effects, on indigenous biodiversity values that meet the criteria in Policy 11(b) (i) – (vi) of the NZCPS, and* *(c) manage non-significant adverse effects of activities on indigenous biodiversity values that meet the criteria in Policy 11(b) of the NZCPS by:* *(i) avoiding adverse effects where practicable, and* *(ii) where adverse effects cannot be avoided, minimising them where practicable, and* *(iii) where adverse effects cannot be minimised they are remedied where practicable, and* *(iv) where residual adverse effects cannot be avoided, minimised, or remedied, biodiversity offsetting is provided where possible, and* *(v) if biodiversity offsetting of residual adverse effects is not possible, the activity itself is avoided unless the activity is Regionally Significant Infrastructure then biodiversity compensation is provided, and* *(vi) the activity itself is avoided if biodiversity compensation cannot be undertaken in a way that is appropriate as set out in Schedule G3, including Clause 2 of that schedule, and* *(d) for all other sites within the coastal environment not meeting Policy 11(a) or (b) of the NZCPS, manage significant adverse effects on indigenous biodiversity values using the*	

effects management hierarchy set out in (b) to (g) of Policy P32. Policy P42: *Protect in accordance with Policy P31 and Policies P38-P41 and, where appropriate, restore the following ecosystems and habitats with significant indigenous biodiversity values:* *(a)…* *(b) …* *(c) natural wetlands, including the natural wetlands identified in Schedule F3 (identified natural wetlands), and* *(d) the ecosystems and habitat-types with significant indigenous biodiversity values in the coastal marine area identified in Schedule F4 (coastal sites) and Schedule F5 (coastal habitats).* *Notes* *All natural wetlands in the Wellington Region are considered to be ecosystems and habitats with significant indigenous biodiversity values as they meet at least two of the criteria listed in Policy 23 of the Regional Policy Statement 2013 for identifying indigenous ecosystems and habitats with significant indigenous biodiversity values; being representativeness and rarity.* Policy P110 *The loss of extent and values of the beds of lakes and rivers and natural wetlands, including as a result of reclamation and drainage, is avoided except where:* *(a) in a natural inland wetland:*	

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(i) the loss of extent or values arises from any of the following: *1. the customary harvest of food or resources undertaken in accordance with tikanga Māori, or* *2. restoration activities, or* *3. scientific research, or* *4. the sustainable harvest of sphagnum moss, or* *5. the construction or maintenance of wetland utility structures, or* *6. the maintenance or operation of specified infrastructure, or other infrastructure, or* *7. natural hazard works, and* *8. where the activity involves reclamation or drainage there are no other practicable alternative methods of providing for the activity,* *Or* *(ii)..* *(b …* *(c)…* *Note* *The effects of any activity that requires a resource consent under this policy will be managed through applying the effects management hierarchy as set out in Policies P31, P37, P38, or P48.*	