

IN THE MATTER OF

the Resource Management Act 1991

AND

IN THE MATTER OF

applications for resource consent (**APP-2005011178.01** and **APP-2018201909.00**) to Horizons Regional Council associated with the construction of a wetland as part of the proposed upgrades to and ongoing operation of the Eketahuna Wastewater Treatment Plant

BY

TARARUA DISTRICT COUNCIL
Applicant

**STATEMENT OF EVIDENCE OF TABITHA MANDERSON (PLANNING)
ON BEHALF OF TARARUA DISTRICT COUNCIL**

12 November 2018

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INTRODUCTION

Background and role

1. My full name is **Tabitha Manderson**.
2. I am a Principal Planner with the consulting firm WSP Opus ("**Opus**"), a firm specialising in engineering environmental science and planning.
3. My first brief of evidence dated 14 March 2018 was given in relation to the application for resource consents (APP-2005011178.01) for the discharges from the Eketahuna Wastewater Treatment Plant ("**EWWT**P") lodged by Tararua District Council ("**TDC**") on 31 March 2015 ("the **First Application**").
4. My evidence is given on behalf of TDC in relation to its application ("the **Wetland Application**") under section 88 of the Resource Management Act 1991 ("**RMA**") for resource consents relating to the construction of a wetland as part of the wider proposed upgrades to and ongoing operation of the EWWT P ("the **Project**").
5. My evidence relates to the preparation of the assessment of environmental effects ("**AEE**") lodged with the Wetland Application and the statutory planning elements of the wetland application.
6. In light of the limited scope of the Wetland Application and the hearing that will take place on 27 November 2018, I address matters relating to the Wetland Application in Part A. My responses to matters raised that fall outside the scope of the Wetland Application and 27 November hearing are addressed as "other matters" under Part B.

Qualifications and experience

7. My qualifications and experience are as set out in my statement of evidence dated 14 March 2017.

Code of conduct

8. I confirm that I have read the 'Code of Conduct' for expert witnesses contained in the Environment Court Practice Note 2014.
9. My evidence has been prepared in compliance with that Code. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of evidence

10. I have been asked by TDC to provide evidence in relation to the following matters:
 - (a) Part A: Wetland Application;
 - (i) Background to the Wetland Application;
 - (ii) Assessment of the Wetland Application against the relevant statutory and non-statutory documents, taking into account the AEE;
 - (iii) Queries raised by the Panel in its minute dated 29 October 2018 relating to the Wetland Application ("**the Ninth Memorandum**");
 - (iv) The submission made by Rangitāne o Tamaki Nui-a-Rua ("**Rangitāne**"); and
 - (v) Matters raised in the Council Officers' Section 42A Reports as they relate to the Wetland Application.
 - (b) Part B: Other matters:
 - (i) Queries raised by the Panel in the Ninth Memorandum outside the scope of the Wetland Application; and
 - (ii) Matters raised in the Council Officers' Section 42A Reports outside the scope of the Wetland Application.
 - (c) Part C: Proposed conditions relating to both the First Application and the Wetland Application.
11. In preparing this report I have considered the Section 42A Reports prepared by Ms Fiona Morton, Senior Consents Planner, Logan Brown, Freshwater and Partnerships Manager (Horizons Regional Council) and Tim Baker, Groundwater. I have also considered the evidence prepared for TDC by Dr Olivier Ausseil (water quality), Mr Roger MacGibbon (wetland design), Ms Ella Boam (groundwater), Mr John Crawford (wastewater) and Mr Blair King, (iwi engagement and operational /Project overview).

EXECUTIVE SUMMARY

12. A suite of applications was prepared in relation to the construction of a wetland, which would enable the EWWTP Project to meet the requirements of Policy 5-11 of Horizons' One Plan.
13. Although there are some areas of disagreement between the various experts, particularly in relation to monitoring and nitrate performance standards for the proposed wetland, there is also a high level of agreement
14. Changes to recommended conditions are discussed and a number of alternatives are proposed, these relate to where the compliance monitoring point for the effluent standards should be, the extent to which specific investigations into inflow and infiltration should be undertaken and monitoring in general. Some comment is also given on the wider suite of conditions from the original hearing.
15. The earthworks, discharge permit and water permit required are consistent with the relevant objectives and policies of the One Plan. Recourse has also been given to Part 2 of the RMA. Subject to imposition of the recommended conditions I considered that granting consent best promotes the purpose of the Act and the One Plan.

PART A: WETLAND APPLICATION

Background to the Wetland Application

16. The background to the Wetland Application is discussed in paragraphs 4 – 10 of Ms Morton's evidence. I agree with this description but outline some further background below.
17. In accordance with the Wetland Application and AEE, TDC proposes that the wetland be constructed and planted within a seven-year term. As discussed below in my evidence under Part B, the term sought for the consents relating to the Wetland Application is intended to align with the seven-year term sought in the First Application. I attach a timeline (as Appendix 1) showing how the works required as part of the Wetland Application will fit together with the wider EWWTP Project. This includes setting out the work that can be undertaken concurrently and the work that needs to be sequential.
18. In developing concept design for the proposed wetland, TDC and its technical experts undertook further consultation with Rangitāne and Kahungunu ki Tamaki nui-a-rua ("**Kahungunu**"). This included hui, site visits,

telephone and email correspondence and the commissioning of cultural values assessments ("CVAs"). TDC's engagement with Rangitāne and Kahungunu is set out in detail in the evidence of Mr King.

19. The primary purpose of the proposed wetland is to ensure the EWWTP Project meets the requirements of pivotal Policy 5-11 in Horizons' One Plan. Policy 5-11 addresses mahi tautara (sewage waste) issues under Chapter 2 in accordance with Policy 2-4 (Table 2.1(h)). Some additional 'polishing' of the wastewater may occur as a secondary function of the wetland. This is described in the Wetland Application as well as the evidence of Mr MacGibbon.

Assessment of the Wetland Application against relevant planning instruments

Section 104(1)

20. Section 104(1) of the RMA sets out matters which a consent authority must, subject to Part 2, have regard to when considering an application for a resource consent.
21. Ms Morton outlines the sub-provisions of section 104 that she considers relevant to the Wetland Application in paragraph 27 of her evidence. I agree with Ms Morton that these are the relevant section 104(1) matters for the Wetland Application.
22. In terms of section H of Ms Morton's report (s104(1)(a) actual and potential effects) I make some additional comments below, in light of the evidence of Ms Boam, Mr MacGibbon and Dr Ausseil.

Surface Water Quality

23. Mr Brown states in his evidence that wetlands have been shown to be effective tools for nitrate removal, with efficiency of removal rates being related to residency time. He goes on to note that the current SIN concentration from the EWWTP is mostly ammoniacal-nitrogen which limits the ability of the wetland to reduce the SIN load and goes on to examine the drivers (in his opinion) for periphyton growth). He also considers that ongoing maintenance of the wetland will be required.
24. In his evidence Dr Ausseil discusses why, in his opinion, factors other than ammoniacal-nitrogen are more likely to drive the periphyton response. He notes that the EWWTP is currently a minor contributor to in-stream nitrate-nitrogen concentrations and loads. He does not consider that wetland

performance will make a material difference to in-stream nitrate-nitrogen concentrations.

25. Dr Ausseil acknowledges there are currently uncertainties regarding the EWWTP on water quality and freshwater ecology, but is of the opinion that the relocation of the discharge point and allowing for monitoring to be undertaken will address those uncertainties.
26. Mr MacGibbon discusses wetland treatment performance, while noting that the wetland has the primary purpose of meeting Policy 5-11 of the One Plan. He provides details about the design of the wetland and recommendations are made about wetland maintenance requirements to sustain wetland plant vigour and wetland performance.
27. I address a number of the conditions recommended by Mr Brown below in my evidence.

Groundwater

28. The nature of the groundwater in the area of the proposed wetland is described in the Wetland Application and evidence of Ms Boam and Mr Baker. I note that there is a high degree of agreement between the two groundwater experts. I do not repeat their findings here however I address Mr Baker's proposed conditions below in my evidence.

Soil disturbance effects / Erosion and Sediment Control

29. In response to the matters detailed at paragraphs 45 - 52 of Ms Morton's report, I refer to the draft Erosion and Sediment Control Plan ("**ESCP**") appended to the Wetland Application and AEE as Appendix VI. A memorandum addressing Ms Morton's queries as well as an updated draft ESCP have been prepared by Colin Stace, Rural Consultant WSP Opus. These are attached as **Appendix 2** and **Appendix 3** to my evidence. I therefore consider that the questions raised by Ms Morton have been addressed and note too that the final ESCP is to be certified by Horizons.

Flooding effects

30. Potential effects in relation to the construction of the bund are described in the Wetland Application and paragraphs 53 to 59 of Ms Morton's report. I do not repeat them here. Mr Bell, Manager of River Engineering, concluded the impact of the bund would be less than minor. That is consistent with the hydraulic modelling report attached to the AEE.

31. The design of the outlet structure is linked to the control of the wetland and will assist in providing control of retention time of treated wastewater in the wetland, as described in the Wetland Application.

Relevant national policy statements

32. I agree with paragraph 61 of Ms Morton's report.

Regional One Plan Policy Statement

Chapter 2: Te Ao Māori

33. I am broadly in agreement with the assessment of the Chapter 2 matters discussed by Ms Morton at paragraphs 62 – 85 of her report subject to my additional comments as set out below.
34. Policy 2-1 outlines that the Regional Council must enable hapū and iwi involvement in resource management. There are a number of actions directed within this Policy. For instance, Policy 2-1(i) relates specifically to the regional council advising and encouraging applicants to undertake direct consultation during resource consent processes.
35. As described in the evidence of Mr King, following the adjournment of the May 2017 hearing (in respect of the First Application) TDC engaged in further consultation with Rangitāne and Kahungunu in respect of the concept design of the proposed wetland.
36. As part of this consultation, and as discussed further in the evidence of Mr King, both Rangitāne and Kahungunu were invited to prepare CVAs.
37. TDC received a CVA from Kahungunu on 21 May 2018 (attached to the Wetland Application as Appendix VII). The CVA included useful recommendations at paragraph 11.7, which TDC has considered in its further development of the wetland design and in developing conditions such as specifying the residence time of 72 hours under average flow conditions. A number of suggestions in the CVA (para 11.7) will as practicable be incorporated into the detailed design.
38. In addition, TDC has agreed to providing the opportunity for further cultural monitoring once the wetland has been operational for two years.
39. In my view the steps taken by TDC are consistent with Policy 2-1(i), as the most relevant paragraph of Policy 2-1. In relation of Policy 2-1(b) as noted in

the evidence of Mr King, TDC has a memorandum of understanding in place with Rangitane.

40. Policy 2-4 states that the specific issues raised by hapū and iwi through the development of the One Plan must be addressed in the manner set out in Table 2.1. It is also recognised in the policy that the issues and explanations do not represent a complete picture of iwi and hapū concerns, but they offer possible explanations as to the depth of feeling and connection hapū and iwi have with the Region's natural resources.
41. Improving water quality is identified as one element of mauri in the context of tikanga Māori, and in Table 2.1 this is primarily addressed in Chapter 5 and the various mechanisms outlined in that Chapter but Objective 1 in particular. Water quality issues that have already been canvassed through the First Application are not revisited as part of the Wetland Application. However, the importance of water quality is discussed in the CVA received from Kahungunu. Further, the Wetland Design Report (Appendix III to the Wetland Application and AEE) prepared by Mr MacGibbon indicates that correctly designed and maintained wetlands have the ability to contribute to the treatment of some contaminants, though the treatment element of the wetland is secondary in this situation. The water quality standards proposed as consent conditions will assist with enhancing water quality. Para (h) of Table 2.2 relates specifically to sewage disposal to water. The relevant parts of the One Plan identified in this table include Objective 5-2, Policy 5-11 and the rules in Chapter 14 of the Regional Plan (Discharges to Land and Water). It is clear that Policy 5-11 is the primary mechanism in the One Plan to address cultural effects of treated human wastewater discharges. This policy requires discharge to (or over/through) land and is highly directive.
42. In my opinion, in both the recommended conditions and the efforts undertaken by the applicant the Wetland Application is consistent with the provisions of Chapter 2.

Chapter 3 – Infrastructure and Energy

43. I agree with paragraphs 71 to 73 of Ms Morton's evidence. I also add that:

- (a) Policy 3-3(b) is important as it is directive and requires the hearing panel to allow minor adverse effects associated with the Wetland Application (and the EWWTP consents as a whole); and
- (b) Policy 3-3(c) provides a series of considerations that the hearing panel must apply should it consider that there are any significant adverse effects.
- (c) The proposed works will form part of the Eketahuna WWTP and requires recognition of regionally important infrastructure under Policy 3-3(a) as recognised by Ms Morton.

Chapter 4 - Land

- 44. I agree with paragraphs 74 to 75 of Ms Morton's evidence, and note the conditions proposed by TDC include the requirement for a certified ESCP.

Chapter 5: Water.

- 45. Ms Morton has provided an additional comment on Policy 5-11 (already discussed above). Her view is the wetland allows the overall application to be consistent with Policy 5-11(a)(ii).
- 46. I agree that the Wetland Application (and by extension the EWWTP Project as a whole) meets Policy 5-11 in that it either/both is applied onto or into land (Policy 5-11(a)(i)) or/and flows overland (Policy 5-11(a)(ii)) through the functioning of the proposed wetland.
- 47. As discussed in the Wetland Application and noted in the evidence of Mr Baker and Ms Boam, a proportion of the treated wastewater will pass through the base of the wetland.
- 48. In addition, as part of wetland's detailed design stage further investigation will be undertaken to determine if further elements could be designed to allow more passage 'through' land. In my opinion this also allows for consistency with Policy 5-11(a)(i). In relation to paragraph 83 of Ms Morton's report, I acknowledge that in light of the submission received from Rangitāne and the CVA prepared by Kahungunu there may be difficulty in stating that the Wetland Application complies with Policy 5-11(a)(iii). However, I agree with paragraph 84 of Ms Morton's evidence that the policy does not require an applicant to meet all three limbs of the policy. As set out above, I consider the Wetland Application (and EWWTP Project) meets limbs (i) and/or (ii) of Policy 5-11(a).

Regional One Plan

Chapter 13 - Land

49. I agree with paragraphs 86 to 88 of Ms Morton's evidence. The proposed mitigation in terms of the ESCP and conditions recommended are consistent with the objective and policies as identified.

Chapter 14 – Discharges to Land and Water

50. I agree with paragraphs 89 and 90 of Ms Morton's evidence. I provide further comment regarding the lining of the wastewater ponds further in Section B below.

Chapter 16 – Takes, Uses and Diversions of Water, and Bores

I agree with paragraphs 92 – 94 of Ms Morton's evidence.

Chapter 17 – Activities in Artificial Watercourses, Beds of Rivers and Lakes, and Damming

51. I agree with paragraph 95 of Ms Morton's evidence.

Chapter 12 – General objectives and policies

52. I agree with paragraphs 97 – 99 of Ms Morton's evidence.

Part 2 Assessment

53. I agree with the thrust of paragraph 105 of Ms Morton's evidence in that the One Plan through Policy 5-11 was the driver for the application and through its provisions provides a comprehensive framework to guide the hearing panel in making its decision. However, the legal approach following *Davidson* will be addressed in legal submissions. In advance of that, as a matter of ensuring it is covered if found by the hearing panel to be necessary, I repeat the Part 2 assessment and comments from the earlier hearing and note that, in relation to the Wetland Application:

- (a) It preserves the natural character of the river and retains its terraced nature, and compared to the existing piped discharge, it reflects section 6(e) values recognizing that full discharge to land, rather than land passage, is the desired outcome of Rangitāne and Kahungunu and it

manages significant risks of natural hazards by having less than minor effects on flood flows.

- (b) It provides for kaitiakitanga through the conditions for cultural monitoring and the wastewater forum, enables the efficient use of the existing EWWTP while maintaining and enhancing amenity values, intrinsic values of ecosystems, maintenance and enhancement of the quality of the environment and the finite characteristics on natural and physical resources.
- (c) Through the consultation undertaken with Rangitāne, and the consultation and the CVA prepared by Kahungunu, TDC has taken into account the principles of the Treaty of Waitangi,
- (d) Overall, the Wetland Applications promote the purpose of the Act by further avoiding, remedying and mitigation adverse effects while providing for the vital health and safety aspects of section 5 and enabling the community to provide for its social, economic and cultural wellbeing.

Queries raised by the Panel relating to Wetland Application

54. The matters raised by the Panel relating to the Wetland Application are addressed in the evidence of Mr King, Mr Crawford, Mr MacGibbon and Dr Ausseil. However, I note:

- (a) proposed timeframes relating to the detailed design and construction of the wetland are detailed in Appendix 1;
- (b) in response to 2.6 of the Ninth Memorandum, it is now proposed that effluent standards apply at the end of the wetland, as set out in the conditions. These standards would apply once the treatment plant had been optimised; and.
- (c) In response to 2.8 of the Ninth Memorandum, an efficiency rate condition has not been proposed as the evidence of Dr Ausseil is that nitrate-nitrogen removal through the wetland will make very little difference to in-stream SIN concentrations.

Comments on submission by Rangitāne o Tamaki Nui-a-Rua

55. The submission made by Rangitāne raises concerns about the extent to which TDC's AEE took into account cultural values and relationships, sections 6(a) and 6(e) of the RMA, and the effects of the discharge as modified by passing through the proposed wetland. Rangitāne sought

conditions aimed at avoiding, remedying or mitigating adverse cultural effects, and also sought that if the consent was granted, that it be for a term of no more than five years,

56. As an initial point, I note that the work TDC has done in terms of iwi engagement and consultation, including seeking CVAs from both Rangitāne and Kahungunu, has been addressed above and in the evidence of Mr King. As stated above, Policy 5-11, and reducing the cultural effects of the existing direct discharge to wastewater drove the Wetland Applications.
57. In terms of conditions, the conditions proposed in relation to the land use consent (as part of the Wetland Application) sought primarily seek to avoid potential adverse effects of sedimentation during the construction period.
58. As part of the wider suite of consents in relation to the overall EWWTP Project, a range of conditions are proposed including effluent quality standards, water quality standards and monitoring (including cultural health monitoring) to measure effects on the receiving environment. Further investigations into alternatives are proposed, which allow for the involvement of a number of parties, and cultural monitoring is proposed.
59. The term of seven years sought was to align with what was proposed for the overall EWWTP upgrades and to allow for monitoring of effects to occur. Based on the timing still recommended by Mr Crawford and the monitoring period recommended by Dr Ausseil a five year term would not be sufficient time to allow these to occur. I remain of the opinion that a seven year term is appropriate and necessary.
60. Evidence presented by Rangitāne at the hearing may assist in further determining effective conditions to avoid, remedy or mitigate adverse effects including cultural effects.

Matters raised in Council Officers' Reports relating to the Wetland Application

Logan Brown

61. In paragraph 15 of his report Mr Brown identified that measures to reduce I&I entering the wastewater network should be undertaken to enable the wetland to function better over time. No quantification is given. Mrs Morton recommended two conditions (G15 and G16).
62. No suggestion is given regarding what sort of reduction should be targeted by Mr Brown. Mr Crawford discussed I&I in his evidence and has analysed

the flow data that has been made available including recent data, Mr Crawford presents a table comparing the 2016 and 2018 data and notes 2018 results are slightly lower when comparing individual statistics. . Mr Crawford also notes *that while true that any i&i reductions achieved in the sewer system will be beneficial to both the treatment system and to the wetland. However I&I programmes are never fully successful.*

63. TDC already has a district-wide programme for looking in to I&I issues, as identified in their 2015-2045 Infrastructure Strategy (attached to the evidence of Mr King). I understand the mains network replacement/repairs following the 2015 earthquake have been completed and other work such as repairs to manholes is currently underway (pers. Comm. Dave Watson).
64. TDC has a number of projects that relate to stormwater and reducing infiltration to the wastewater network across the District. Accordingly, I do not consider it is necessary to include a specific consent condition to give effect to an asset management issue that is already the responsibility of the applicant. In addition, based on the evidence of Mr Crawford reducing I&I in a meaningful way can be challenging.
65. However, if the Panel are still of a mind to impose such a condition I have drafted an alternative.
66. The alternative condition recognises that works undertaken need to have cost commensurate to likely gains (or in this case reductions) in I&I that would be realised. The works programme also needs to recognise that the private connections to the wastewater network can often be the cause of issues.
67. For this reason I have recommended that any reporting and works programme be done in general accordance with the *“Water New Zealand Infiltration and Inflow Control Manual”, prepared by Water New Zealand in 2015.*
68. Any works programme must be developed following a robust cost-benefit analysis and be compliant with the requirements of the Local Government Act 2002. The alternative condition also makes reference to utilising existing work (such as through annual plan identification of works) rather than a separate piece of work would need to be commissioned.

69. Ensuring that works undertaken in relation to I&I are cost effective is in my opinion consistent with the Foxton WWTP decision where affordability to the community should be taken into account.¹
70. Mr Brown considered it will be of vital importance to monitor the treatment performance of the wetland in relation to nitrogen removal. He has also suggested further investigation into converting more of the treated wastewater to nitrate.
71. Mr Crawford notes that while ammonia can be removed by a treatment plant it would be functionally different to what is there now and what is proposed, and would not just involve additional tertiary treatment. Mr Crawford also notes that the SIN levels in the treated effluent are already low for a pond system. Dr Ausseil notes that the loads being contributed to the Makakahi River from the EWWTP are very small at about 4%.
72. Condition DLW7 as proposed by Horizons staff would require considerable additional monitoring to demonstrate that no 'exacerbation' in any contaminant by the wetland was occurring. In order to avoid unnecessary monitoring, it is now proposed to have the compliance point for the treated effluent standards, which have not changed, apply at the end of the treatment wetland, with the exception of E.Coli. It is my understanding that the water quality effects assessed by Dr Ausseil were based on the effluent standards outlined in Mr Crawford's original evidence. Therefore having these standards apply at the end of the wetland will ensure that the environmental effects predicted for the Makakahi River are able to be realised.
73. The evidence of Mr MacGibbon recognises that if waterfowl are attracted to the wetland there is the chance that some E.coli could be introduced to the wetland system. It would be my understanding that this would be similar to riparian or biodiversity planting that would encourage birdlife.
74. While I consider that wetland monitoring on nitrogen treatment performance may assist were TDC relying on the wetland for treatment, as discussed in the application and evidence of Mr MacGibbon the primary purpose of the wetland is to meet the requirements of Policy 5-11 and as far as possible to address cultural concerns. In my opinion, given the evidence of Dr Ausseil is that nitrate-nitrogen removal through the wetland will make very little difference to the in-stream SIN concentrations, monitoring of the wetland

¹ *Horowhenua District Council v Manawatu-Wanganui Regional Council & Anor* [2018] NZEnvC 163, at [303].

should focus on cultural matters. This will be addressed through the proposed cultural monitoring included in the conditions.

75. Mr MacGibbon questions the need for any monitoring given the low contribution that the EWWTP makes to instream nitrate-nitrogen concentrations and loads. Accordingly, I do not recommend that a condition requiring a performance standard for nitrate-nitrogen removal is warranted to avoid environmental effect. Given the short term sought to allow for the remaining uncertainties regarding the effects generated by the EWWTP monitoring seasonal performance of the wetland may serve a useful research purpose, but I do not see the resource management need for it.
76. I note that the CVA prepared by Kahungunu requested that monitoring be undertaken downstream of the wetland. It is now proposed that the sampling point where the effluent standards will apply is downstream of the treatment wetland.
77. Mr Brown also recommends a performance standard for reduction of nitrate concentrations. Dr Ausseil notes that the Eketahuna WWTP contributes approximately 4% of the nitrate-nitrogen measured in the Makakahi River. A range of nitrate removal rate efficiencies was analysed by Dr Ausseil and he considered that the ecological relevance of such concentration is very small.
78. The water quality standards for the receiving environment are in my opinion sufficient to protect the environment. In addition to the effluent standards to be applied post wetland, this is in my opinion sufficient to avoid potential adverse effects on the environment while retaining certain and enforceable conditions for the applicant.
79. While I do not consider that a review in 2020 will serve any purpose, as the system will only have just been installed and the wetland plants will be establishing, I agree that a review condition in July 2020 aligns with the policy direction of Policy 12-5.

Tim Baker

80. I note that there is a large degree of agreement between Mr Baker and Ms Boam in relation to groundwater matters and Ms Boam and Mr Baker consider that groundwater under the terrace where the wetland is proposed will likely enter the River. Mr Baker recommended a liner (clay) so that the hydraulic conductivity of no greater than 1.4×10^{-7} m/s is achieved. This has been incorporated in TDC's proposed conditions.

Fiona Morton

81. My responses to matters raised in Ms Morton's Section 42A Report, as they relate to the Wetland Application, are set out above in this evidence.

PART B: OTHER MATTERS

Responses to Panel questions outside the scope of the Wetland Application

82. The Panel has asked, at paragraph 2.5 of the Ninth Memorandum, whether TDC still seeks a term expiring 1 July 2025 as per "the evidence tabled at the hearing." Further, they have asked for the legal basis, should a different term be sought.
83. The legal basis for the term sought will be addressed in TDC's legal submissions, however I note that the seven-year term that is proposed in relation to the overall EWWTP Project allowed for the various treatment plant upgrades to be put in place and the discharge point moved. It then allowed for an optimising period and subsequent monitoring.
84. I can confirm a seven year term is still sought, however the proposed expiry date will be amended to reflect the passage of time in progressing the First Application and Wetland Application.
85. It was acknowledged during the original hearing that there is some uncertainty regarding 'isolating' the effects of the wastewater treatment plant discharge, due in part to the location of the current monitoring sites and the influence of the Ngatahaka Creek when it joins the Makakahi Stream. As above, the seven-year term proposed was to allow for a rationalised monitoring programme to be undertaken. This position has not changed.

Matters raised in Council Officers' Section 42A Report outside the scope of the Wetland Application

86. In response to paragraph 68 of Ms Morton's report, I note that alternative disposal options have been considered by the applicant. This was discussed at the original hearing, Mr King in particular expressed the need for any solution to also be affordable for the Community. This is, in my opinion, consistent with the recent Environment Court Decision for the Foxton Wastewater Treatment Plant. Further assessment of alternatives including land disposal is anticipated in the alternatives investigation study put forward in the recommended conditions.

87. The evidence of Mr King notes that the Eketahuna Wastewater Ponds will not be lined as part of this works package. Mr Crawford outlined his opinion in relation to why the ponds should not be lined in the original hearing and in his evidence for this hearing. In para 91 of Ms Morton's evidence she noted that in the event of the ponds not being lined, that monitoring bores would be required based on the evidence of Mr Baker. Ms Boam is of the opinion that monitoring would not be required, as in her opinion the base of the ponds are highly likely to be within mudstone bedrock which is impermeable. Confirmation of this could be undertaken by further Geotech investigation adjacent to the ponds and a water balance type approach to determining if any significant leakage is occurring.

PART C: CONDITIONS

88. Ms Morton provided a full suite of conditions and I comment on these accordingly. For many of them comment was provided on my original evidence and therefore I try to avoid repeating that here. A marked up version of conditions is attached as Appendix 1.
89. I do not recommend providing an optimising programme within three months of granting of permits. Optimising occurs once a plant has been commissioned. At the original hearing a condition based on the timings provided by Mr Crawford, in relation to design and construction of upgrades, was recommended. Based on Mr Crawford's evidence these timings have not changed. Outlining performance testing to be undertaken is part of the condition recommended at the original hearing that requires reports to be submitted detailing the procurement process.
90. Above I discussed an alternative condition regarding I&I, to both recognise work that TDC is already committed to undertaking, also recognising that maintaining the WWTP network asset is a long term programme.
91. I recommend, based on the evidence of Ms Boam monitoring of potential seepage of the ponds be done by way of a water balance investigation and also additional testing of the substrate around the ponds. This would feed in to making a recommendation regarding appropriate monitoring. For instance, if the water balance investigation and substrate testing demonstrated the base of the ponds was set in mudstone, there would be no utility in further monitoring because of the impermeability of the mudstone.

92. As discussed above TDC proposes that the effluent quality standards apply at the end of the proposed wetland, with the exception of E.Coli. The monitoring point for E.coli would be taken post UV. This will avoid unnecessary duplication of monitoring costs.
93. In relation to the different monitoring point for the E.Coli the evidence of Mr MacGibbon recognises that there is the potential for birds to be attracted to the wetland or surrounding planting (if this can be realised) and with that is a potential source of faecal matter from the birds. Limited control can be achieved through good management of the wetland, ensuring as little open water as possible for example, and this will be given effect to as best it can through the management plan as outlined in the application. Beyond this there is limited control that would be reasonable to impose on the applicant in my opinion. The effect of the wetland would be similar to riparian planting which is actively encouraged throughout the Region.
94. As discussed above, Dr Ausseil considers in his evidence that the ecological relevance of nitrate removal that may be generated by the wetland is small. TDC has not relied on the wetland for additional treatment, and nor does the known environmental situation warrant it. On this basis it does not seem that imposing an efficiency standard would make a material difference to avoid, remedy or mitigate an effect. I do not propose impose such a standard in these circumstances where to do so would have a limited, if any, demonstrable environmental benefit.
95. Seasonal monitoring of the nitrogen performance of the wetland may help with improving the understanding of well-constructed wetlands. But this would not be a necessary resource management purpose associated with effects of the project.
96. I have recommended an alternative condition that would require a water balance to be undertaken on the ponds and augers of material adjacent to and if possible within the ponds themselves (recognising there are limitations particularly within the ponds). From this a recommendation will be made for longer term monitoring that would be captured through a link back to the OMP condition.
97. The effluent standards proposed are based on the evidence of Mr Crawford and would apply after the plant has been constructed and optimized. The dates provided are based on the timings presented by Mr Crawford.

98. I have made other changes to dates within the conditions based predominantly on timeframes derived from detailed design, construction timeframes and planting seasons.

Tabitha Manderson

12 November 2018

APPENDIX 1 – TDC MARKED UP VERSION OF HRC CONDITIONS WITH COMMENTS AND ALTERNATIVES

APPENDIX 2 – MEMORANDUM REGARDING ESCP QUESTION PREPARED BY COLIN STACE, RURAL CONSULTANT

APPENDIX 3 – UPDATED ESCP FOR EKETAHUNA WETLAND (in two separate pdfs)