

**In the matter of the Resource Management Act 1991**

**Proposed  
Plan Change 36 of the  
Taupō District Plan**

**Infrastructure evidence relating to:**

**Drinking water  
Wastewater  
Stormwater  
Reserves**

Prepared by

**Thomas Swindells**

**Michael Cordell**

**Roger Stokes**

**Nathan Mourie**

## **Scope of this evidence**

1. This evidence relates to infrastructure issues including the three waters and reserve provision to Taupō District Council Plan Change 36 - Whareroa North ('Project').
2. Drinking water evidence is provided by Thomas Swindells, Taupō District Council Asset Manager – Water.
3. Wastewater evidence is provided by Michael Cordell, Taupō District Council Asset Manager – Waterwater.
4. Stormwater evidence is provided by Roger Stokes, Taupō District Council Development Engineer.
5. Reserves evidence is provided by Nathan Mourie, Taupō District Council Senior Reserves Planner.

## **Background**

6. Plan Change 36 was notified on 31 October 2019. The Plan Change Request seeks to rezone land to the North of the existing Whareroa settlement from Rural Environment to Residential Environment and subject to a 'Whareroa North Outline Development Plan' to guide supporting infrastructure provision and enable up to 160 residential dwellings.

### **Existing Whareroa Drinking Water Context**

7. The village is currently serviced by Taupō District Council drinking-water supply. Water is sourced from 2 ground water bores, is treated with chlorine for disinfection, and is delivered to the community via a pump station, pipe network, and 2 storage reservoirs.

### **Existing Whareroa Wastewater Context**

8. Wastewater is currently managed by a gravity reticulation system draining to two pump stations which pump to oxidation ponds. The primary oxidation pond has a surface area of 1,300m<sup>2</sup> and the secondary pond an area of 2,600m<sup>2</sup>. The treated effluent spray is

irrigated to 1.3ha of pasture land. An additional piece of land known as the “expansion area” is currently available but not irrigated.

### **Existing Whareroa Stormwater Context**

9. Taupō District Council provides stormwater services as part of the roading network or off road via gullies and overland flow paths in the urban areas within the district. The stormwater network in Whareroa is consistent with this. Whareroa’s stormwater falls under a comprehensive discharge consent which covers all the southern lake settlements (Resource Consent 105049).

### **Existing Whareroa Reserve Context**

10. The existing Whareroa Village has a well-established network of reserves. This includes large areas of foreshore reserves areas and a network of linkages and connections through the residential areas. Vegetated reserve land also runs both sides of the stream. A single tennis court at Whareroa is located on privately owned land leased by Council and made available for public use. There is a swing and a slide at the same location, which are Council assets.

### **Development Standards**

11. For a base infrastructure standard Taupō District Council utilises the Code of Practice for the Development of Land (September 2009), which uses NZS4404:2004 as its basis. This provides a basic standard primarily focused on the construction of infrastructure, but variations to this are commonly approved during the resource consenting process or during the detailed design phase to respond to the particular context and merits of a development. The Code of Practice is typically referenced as part of the normal consent conditions.

## **Drinking Water**

### **Introduction**

12. My full name is Thomas Arthur Swindells. I am currently employed by the Taupō District Council as Asset Manager Water.

13. I have been working in the water and wastewater field for over fifteen years including as a design and commissioning engineer, contract manager, operations manager, and more recently in the asset management field. I have a Bachelor of Technology (Chemistry) degree with Honours from Massey University.

### **Executive summary**

14. My evidence is specific to the matters of Water Engineering based on my 15 years' experience in the field and Bachelor of Technology (Chemistry) degree with Honours qualification.
15. My evidence is based on a review of:
  - a) Whareroa North Plan Change Report
  - b) Infrastructure Report KeySolutions Ltd
16. In addition, I am familiar with the site and surrounds.
17. In summary I recommend, in terms of Drinking Water:
  - a) That the current water take consent at Whareroa is sufficient to support the proposed Plan Change.
  - b) That the upgrades to the water supply network are quantified in the Proponent's evidence due 29<sup>th</sup> April in order to review and fully understand the costs and benefits of the proposed plan change.
  - c) That certainty be provided by the Proponent that drinking water pipes and access to those services in perpetuity can be provided across the Whareroa stream.

### **Water take consent**

18. The current water take consent at Whareroa has headroom for additional growth in the supply area. Expected water demand from the proposed development is not presented in the application.
19. Using peak water demand from the existing lots as a guide, I expect that the proposed development could be serviced within the existing water take consent. This would leave little headroom against the consent for further growth, for example from infill housing, unless further demand management controls were introduced e.g. universal metering. It

is understood that the Plan Change seeks to introduce provisions that would limit development to a maximum of 160 residential units by way of consent notice on any subsequent subdivision. This mechanism if definitive, would resolve this concern.

20. It should also be noted that the water take consent may be reviewed by Waikato Regional Council at any time during 2023 and 2028, and this could result in a reduction of the water take volume. Any additional demand above that identified in the Plan Change application would require a variation to Council's water take consent.

### **Water Supply System Upgrades**

21. The application provides limited information regarding upgrades required to the water supply system to cater for the proposed development. It states an intention to complete comprehensive analysis at the appropriate time.
22. The TDC Water Asset Management Plan 2018, states that the current Whareroa water supply system is not capable of catering for additional development or infill.
23. The application has not quantified what infrastructure upgrades are required should the development proceed. I note however, that to service the proposed development, plant capacity would need to increase by 80%. From an engineering perspective, this is a significant capacity increase and therefore is likely to require significant infrastructure upgrades (and cost) to achieve.
24. As noted in the application, a future treatment upgrade is in planning to ensure the plant will meet the Drinking Water Standards of NZ (DWSNZ). This upgrade is currently planned for 2025 but as the project is driven by a public health need (compliance with the DWSNZ), acceleration of this timeline is possible. Upgrade of the plant could ensure compliance with the DWSNZ and also increase capacity for the proposed development, with the increase in capacity costs to be met by the developer.
25. At present the upgrade funding has been based on the water demand from the existing lots. The proposed development will impact the plant upgrade design and the funding allowed for in the LTP.
26. Should the proposed development proceed, the additional cost of upgrade would be expected to be passed onto the developer. Costs would be in the order of \$130,000 to \$300,000 Further to this, timing for the development will be of importance for the upgrade project to ensure future water supply capacity is available when required.

### **Mechanism for services to cross Whareroa Stream**

27. The application does not identify a legal mechanism for services such as water pipes to cross the Whareroa Stream. The 2007 Deed between the Crown and Tūwharetoa Maori Trust Board gives Tūwharetoa fee simple title to the stream bed, air space within the water column and airspace above the water to a reasonable height.
28. Without identification of such a mechanism there is no guarantee that a pipe can be legally built across the stream or have permanent access in perpetuity.

### **Conclusion**

29. Based on the information provided I can conclude:
  - a) There is capacity within the existing Whareroa water take consent to accommodate the proposed development, however this may not leave much headroom for any further growth (i.e. infill). Accordingly, a restraint on development beyond 160 dwellings is supported.
  - b) Significant upgrades to the water supply system will be required, and at this stage are not quantified by the application.
  - c) No legal mechanism and associated approval by the Tūwharetoa Maori Trust Board for services to cross the Whareroa Stream has been included within the application.

## **Wastewater**

### **Introduction**

30. My full name is Michael John Cordell. I am currently employed by the Taupō District Council as Asset Manager Wastewater.
31. I have been working in the water and wastewater field for over fifteen years including as a construction supervisor, as a design and commissioning engineer, and more recently in the asset management field. I have a Bachelor of Technology (Chemistry) degree from Massey University and I am a Chartered Professional Engineer.

### **Executive summary**

32. My evidence is specific to the matters of Wastewater Engineering based on over 15 years' experience in the field and a Bachelor of Technology (Chemistry) qualification.
33. My evidence is based on a review of:
  - a) Whareroa North Plan Change Report
  - b) Infrastructure Report KeySolutions Ltd
34. In addition, I am familiar with the site and surrounds.
35. In summary, in terms of wastewater:
  - a) The wastewater discharge consent held by Council has enough consented discharge volumes to accommodate the plan change and Council has enough land on which to dispose of this wastewater.
  - b) The discharge consent also imposes a nitrogen limit and the Plan Change once fully developed would exceed this nitrogen limit. However, the mass of nitrogen that would need to be discharged, over the consented limit can be offset by removing nitrogen elsewhere in the Lake Taupō Catchment, or through infrastructure improvements.—This can be managed and is not a critical impediment.
  - c) I recommend that the upgrades to the wastewater network are quantified in the Proponent's evidence due 29th April in order to review and fully understand the costs and benefits of the proposed plan change.
  - d) That certainty be provided by the Proponent that wastewater pipes and access to those services in perpetuity can be provided across the Whareroa stream.

### **Wastewater Discharge Consent**

36. Council obtained a new discharge consent for discharge from the wastewater treatment plant in January 2019. Consideration was given to the potential of the Whareroa North development when applying for this consent. The Consent requires Council to limit the total nitrogen (TN) load discharged so it does not exceed 446 kilograms of TN per year.

37. In 2014, 5.06 Ha of land adjacent to the existing wastewater irrigation was vested in TDC, this land originating from land owned by HAUHUNGAORA 6 INCORPORATION. This area is irrigation 'expansion area'.
38. The Council has enough land area available to appropriately dispose of the treated wastewater volumes for the existing community and the Whareroa North Subdivision and this is consented.
39. However, assuming existing community fully developed and connection of Whareroa North Development, the consented limit of **446 kg/yr** of nitrogen discharge would be exceeded by up to approximately 136 dwellings.
40. The table below outlines the potential nitrogen discharge at each stage of development.

<i>FUTURE GROWTH SCENARIOS</i>	<i>Existing Subdivision</i>	<i>Whareroa North Proposal</i>	<i>TOTAL</i>
<i>Number of Lots</i>	202	160	362
<i>Estimated annual mass of nitrogen discharge [kg Nitrogen /yr - assuming conservative 25g/m<sup>3</sup> Nitrogen in discharge]</i>	387	<u>329</u>	<b>716 kg/yr</b>

41. With both the existing subdivision and the Whareroa North Proposal fully developed, the estimated nitrogen discharge could exceed the consent limit by 270 kgN/yr (716 – 446). This is equivalent to approximately 136 dwellings. This is a conservative assumption based on an effluent nitrogen concentration of 25 g/m<sup>3</sup>. A slightly less conservative assumption of effluent nitrogen concentration of 20 g/m<sup>3</sup> would mean the shortfall would be in the order of some 80 houses.
42. The long-term average nitrogen concentration discharged from the Whareroa treatment ponds is less than 20 g/m<sup>3</sup>. However, there have been years where the average concentration was been close to 25 g/m<sup>3</sup>. We need to be conservative to ensure we maintain compliance with resource consent conditions. As the ponds receive more waste it is possible the discharge increases. This is why the higher, more conservative figure of 25 g/m<sup>3</sup> has been applied as our assumption for consenting purposes.



43. The 446 kg/yr nitrogen limit set by Waikato Regional Council is based on the mass of nitrogen discharged from the Whareroa WWTP and the nitrogen allowance associated with 'expansion area' the permitted activity rules at the time of the nitrogen benchmark (2001 – 2005) and less 20%. This is well described in the '*Whareroa WWTP resource consent and evaluation report*' by Waikato Regional Council (Attachment 1).
44. There is also a provision in the resource consent that allows discharge of nitrogen that is greater than the stated limit provided there is an equivalent offset elsewhere within the Lake Taupō catchment and the other consent conditions are met. TDC can meet this condition by either upgrading the WWTP to improve nitrogen removal (to stay below 446 kg/yr), by choosing to offset nitrogen above the limit e.g. reduction at another WWTP, by purchase of nitrogen credits. Either of these scenarios can be achieved; but there are development costs associated with these.
45. The benchmark period calculations for loading rates is given in the table below.

<i>WWTP DESCHARGE - BENCHMARK PERIOD</i>	
<i>Mass of Nitrogen discharged from WWTP at benchmarking period</i>	<i>179 kg/yr</i>
<i>Mass of Nitrogen discharged from WWTP at benchmarking period Less 20% (A)</i>	<i>143.2 kg/yr</i>
<i>EXPANSION AREA - BENCHMARK PERIOD</i>	
<i>Irrigation expansion area</i>	<i>5.06 Ha</i>
<i>Permitted activity provision for farmland</i>	<i>75 kg/ha/yr</i>
<i>Total permitted activity for farmland</i>	<i><u>379.5</u> kg/yr</i>
<i>Total permitted activity provision for wastewater Less 20% (B)</i>	<i><u>303.6</u> kg/yr</i>
<i>COMBINED – BENCHMARK PERIOD</i>	
<i>Combined nitrogen allowance with 20% reduction in long term nitrogen loading rates (A + B) - rounded down</i>	<i><b>446 kg/yr</b></i>

46. The expected amount of nitrogen that will need to be discharged due to the development is, conservatively, 329 kgN/yr (ref point 40). The nitrogen associate with the 'expansion

area' vested in Council from HAUHUNGAORA 6 INCORPORATION that is available to for wastewater discharge is 303.6 kg/yr (ref point 45). Given the nitrogen discharge estimates are conservative these are approximately equivalent.

### **Wastewater Supply System Upgrades**

47. In order to dispose of additional wastewater volumes received as a result of the development, Council is required to expand the irrigation system. The land required for this expansion is available as noted above.
48. Great Lake Consultants undertook a review of the existing wastewater treatment infrastructure and draft consent conditions and concluded that installation of a mechanical aerator would be required, along with installation of a third pond to buffer peak flows prior to irrigation. Note that these upgrades do not provide nitrogen removal and therefore offsetting of nitrogen would still be required.
49. If the WWTP was upgraded to provide nitrogen removal the required upgrades would be more substantial. The cheaper and more practical option is likely to execute the more minor upgrades mentioned above and offset the additional nitrogen discharged (by equivalent offset elsewhere within the Lake Taupō catchment) rather than removing it through an advanced treatment process.
50. New reticulation infrastructure will be required including a new wastewater pump station and rising main.
51. The costs of the reticulation upgrades and a portion of the costs associated with plant improvement and irrigation expansion are attributable to the Whareroa North development.

### **Mechanism for services to cross Whareroa Stream**

52. The application does not identify a legal mechanism for services such as wastewater pipes to cross the Whareroa Stream. The 2007 Deed between the Crown and Tūwharetoa Maori Trust Board gives Tūwharetoa fee simple title to the stream bed, air space within the water column and airspace above the water to a reasonable height.

53. Without identification of such a mechanism there is no guarantee that a pipe can be legally built across the stream or have permanent approval in perpetuity; and without this Council could not provide water services to the development.

## **Conclusion**

54. Based on the information provided I can conclude:
- a) There is capacity within the existing Whareroa wastewater take consent discharge volumes to accommodate the plan change and Council has enough land on which to dispose of this wastewater.
  - b) Consent volumes for Nitrogen discharge would be exceeded by the completed development but there are alternative ways of addressing this.
  - c) No legal mechanism and associated approval by the Tūwharetoa Maori Trust Board for services to cross the Whareroa Stream has been included within the application.

## **Stormwater**

### **Introduction**

55. My name is Roger Stokes. I am Development Engineer with Taupō District Council (TDC), a position I've held since February 2008.
56. I have approximately 35 years' experience working in the stormwater, water, wastewater, roading and land development practice areas. I have practiced as a design consultant, project manager and regulatory engineer for several private and local government employers. I have overseen the engineering aspects of over 5000 subdivided lots and the creation of in excess of 100 new public roadways. My professional qualifications are NZ Certificate in Engineering (Civil) and Bachelor of Engineering (1st Class Hons) (Civil) from the University of Auckland 1989. I am a professional member of Engineering New Zealand.
57. I manage the engineering aspects of subdivision in Taupō District and was involved in the last stage of subdivision on the south side of the Whareroa Stream in the mid-2000's.

### **Executive summary**

58. My evidence is specific to the matters of stormwater based on over 30 years' experience in the field and a Bachelor of Engineering (1st Class Hons) (Civil) qualification.
59. My evidence is based on a review of:
  - d) Whareroa North Plan Change Report
  - e) Infrastructure Report KeySolutions Ltd
  - f) Revised Whareroa North Concept Plan (Oct 2019)
  - g) Modified Whareroa North Concept Plan (9 April 2020).
60. In addition, I am familiar with the site and surrounds and was involved in the last stage of the subdivision on the south side of the Whareroa Stream.
61. In summary I recommend, in terms of stormwater:
  - h) That the proposed stormwater management regime is accepted in principle, being based on typical land development practices used throughout the Taupō district.
  - i) That this be approval be subject to the geotechnical engineers also being satisfied with the methodology proposed.
  - j) I support the plan change based on the comments above.

### **Stormwater provision**

62. I have been asked to comment on the stormwater aspects of the proposed development area. My comments will be specific to the stormwater design approach and its similarity to other Taupō developments. The geotechnical aspects of the underlying ground and its suitability for the proposed stormwater disposal methods will be left to the geotechnical engineers to confirm.
63. It's not my intention to examine the technical details of the proposed solutions in detail in this evidence. The Council has control during the subdivision resource consent

process of the specific design of the infrastructure, and this application doesn't extend into the engineering detail, as would be expected.

64. The stormwater concepts of dispersed ground soakage and vegetated swales treatment is consistent with other recent developments around Lake Taupō.
65. Private residential dwellings, along with their associated patios and driveways will be required to collect and dispose of stormwater via onsite soakage systems, as is normal practice elsewhere in Taupō District on elevated pumice sites.
66. As an interim measure until the dwellings are built, it is normally a consent requirement at the completion of each subdivision stage that cutoff drains will be installed by the developer around each section to capture runoff from the site and contain it in an open soakage trench or pit. This prevents silt-laden runoff during the initial grass-establishment phase and limits the volume of water running off it, potentially overloading the roading network system.
67. For disposal of road stormwater runoff into the environment the methods will need to comply with the Waikato Regional Council (WRC) guidelines. The application advises this is the case and that will be verified in detail at the time of subdivision resource consent and again during the construction phase. If the permitted activity rules and guidelines of WRC are not met in full, they will be the subject of a resource consent application to WRC.
68. The site is at an end of the transportation network and historically being a holiday area is expected to have low traffic volumes. Vehicle usage is the primary source of pollutants in stormwater runoff from roads. With the low level of vehicle activity grassed verges and swales are a sustainable option as parking stresses are low.
69. However, the character of the site is different to most of the urban-density development in Taupō district, in that it is set on an elevated site above an escarpment that falls steeply into the Whareroa Stream. There has been and continues to be an active erosion channel at the base of the primary bowl, as identified in the applicant's geotechnical report. This has been the issue of most concern to this writer and Council's stormwater asset manager.
70. The approach of splitting up the catchments into smaller elements to limit the amount of water draining into the basin is considered appropriate, subject to Geotechnical confirmation. Council does not wish to inherit a liability in the form of an active erosion

feature. The proposed reserve around the feature will also need to be safe for public use, as will any other accessible areas that create a fall risk for the general public.

## **Conclusions**

71. Based on the assessment above I conclude:
- a) The proposed development proposes standard land development practices regarding stormwater.
  - b) It is based on minimizing the concentration of collected stormwater, the improvement of runoff water quality using the recommended Waikato Regional Council guidelines for the use of swales and the disposal of stormwater by ground soakage.
  - c) The design is intended to reduce the potential for direct surface runoff over the cliff edges.
  - d) The independent geotechnical assessment must conclude that the injection of the stormwater runoff to ground is safe in each sub-catchment and won't cause erosion of the escarpment, land instability of the cliff edge or reserves, or create public fall hazards.

## **Reserve Provision**

### **Introduction**

72. My full name is Nathan Mourie. I am a Senior Reserves Planner at Taupō District Council. I have held this position since July 2016.
73. I have a Masters Degree in Landscape Architecture from Victoria University received in 2012 and have worked in Parks and Reserves planning since graduating.

### **Executive summary**

74. My evidence is specific to the matters of reserve provision based on my 8 years' experience in the field and my Masters Degree in Landscape Architecture qualification.

75. I have reviewed the following documents relevant to reserve provision for the Whareroa North Plan Change Request:
- a) Whareroa North Plan Change Report (December 2017)
  - b) Revised Whareroa North Concept Plan (Oct 2019)
  - c) Modified Whareroa North Concept Plan (9 April 2020).
76. In addition, I am familiar with the site and surrounds.
77. In summary I recommend, in terms of reserve provision:
- a) The provision of reserve space in the Whareroa North concept plan appears to be adequate based on the values attributed to the reserves in this area, and on current practice of reserve provision in the District.
  - b) Measures need to be set out within the Plan Change to ensure appropriate design and layout of linkages and stormwater reserves, to ensure these are appropriate and do not lead to ongoing maintenance costs.

### **Provision of Reserves**

78. In this case I am of the view that reserve provision is adequate – based on the combination of the Amended Provisions ‘Concept Stormwater Package’ which identifies a 10,000m<sup>2</sup> reserve area (presumably to vest in Council) located adjacent to the scarp and stormwater management associated with ‘Future Stages’, as well as a pedestrian / cycle link identified in the ‘Whareroa North Concept Plan’. I consider that the provision of reserves and linkages should be clearly identified on the ‘Whareroa North Concept Plan’, and that additional details be added to the ‘Key Outcomes’ statements as to the type and planting of the reserves (and the width and materiality of pedestrian / cycle link). I note that it is preferable to provide additional native revegetation areas linked to the existing, adjacent natural environments than to provide formal park spaces which will require higher maintenance requirements in the long term.
79. The values attributed to the reserve environment are set out within the South Western Bay Settlements Reserve Management Plan 2015:
80. *The reserves are highly valued because they provide:*

- *Green and open space amongst development (roads and buildings)*
- *Natural beauty*
- *A range of passive and active recreational opportunities*
- *Recreational amenities to facilitate enjoyment of the reserves*
- *Lake viewpoints, and a setting for the views from private dwellings*
- *Access to the lake and beaches*
- *Habitats for plants and wildlife (birdlife is especially valued).*

81. Based on these values, along with nearby existing reserves and lakefront which provide semi-formal recreation and the likely low usually resident population; I do not feel any formal or semi-formal spaces should be required within the development. Both given the informality and semi-natural setting associated with Whareroa, and secondly the additional strain it would place on Council's operations team given the relatively remote location of the proposed development and the effort and resource required to send teams out there to maintain formal reserves.
82. The plans have identified walkways and linkages within the proposed development. The linkages need to be of a sufficient scale to meet basic self-sustainability (i.e. 10-15 metres) and that the public facing boundaries are an adequate width to provide a suitable access and meaningful breaks to the residential development. As above, the applicant should address these matters through evidence.
83. I have some concerns about the proposed stormwater reserves in the amended Whareroa North Concept Plan (which I note does not form part of the notified package). Due to the nature of this plan there is uncertainty about what the final outcome will look like, how they will integrate into the balance of the reserve or how much ongoing maintenance they will require. Accordingly, I would be expecting greater precision in any plan provisions in relation to such.
84. At this time with the high-level concept I cannot tell how successfully the proposed reserve network would integrate into the surrounding environment. I would expect greater detail in the Outline Development Plan such that if this plan was approved, that sufficient certainty and controls were present to ensure that the final design and implementation was overseen and approved by Council officers.



## Conclusion

85. Based on the information provided I can conclude:

- The provision of reserve space in the Whareroa North concept plan appears to be adequate.
- Due to maintenance issues and the physical attributes of this location, native revegetation and connections are preferable to formal or semi-formal spaces.
- Linkages provided within the development need to be of adequate width to provide a suitable access and meaningful breaks to the residential development.
- It is currently uncertain due to the high-level nature of the plans what the stormwater reserves will entail.
- I would expect that sufficient controls will be put in place to ensure final design and implementation of stormwater reserves and linkages are overseen and approved by Council Officers.

# Consent Evaluation Report

<b>Applicant:</b>	Taupo District Council	<b>File No.:</b>	60 54 64A
<b>Address of Site:</b>	Whareroa Rd, Whareroa	<b>Project Code:</b>	RC23826
<b>Application Number:</b>	APP138347		

## 1 Introduction

Taupo District Council (TDC) lodged an application with the Waikato Regional Council on 11 May 2017. The application consists of the following activities for which authorisation is sought:

Reference Id	Activity Subtype	Activity Description
APP138347.01.01	Discharge Permit: Land-Sewage	To discharge treated municipal wastewater to land and associated contaminants to air, from the Whareroa wastewater treatment plant.

The applicant has contracted consultants to assist in the preparation of the above applications and to assess the effects of the proposal. Any reference to “the applicant” in this report should be understood to signify the applicant and/or any consultant representing the applicant.

Supporting information was supplied for this application in the following documents:

1. “Taupo District Council Whareroa Wastewater Treatment Scheme - Application for Resource Consent to Waikato Regional Council” Opus International Consultants Ltd., May 2017 (Waikato Regional Council Doc Ref 10428437); and
2. “Whareroa Wastewater Treatment Plant Consent Replacement Application.” Taupo District Council, 13 November 2018 (Waikato Regional Council Doc Ref 13374457); and
3. “APP138347 Draft Conditions 5-12-2018” Taupo District Council, 19 December 2018 (Waikato Regional Council Doc Ref 13578130);

From this point the above documents will be referred to as the “AEE”.

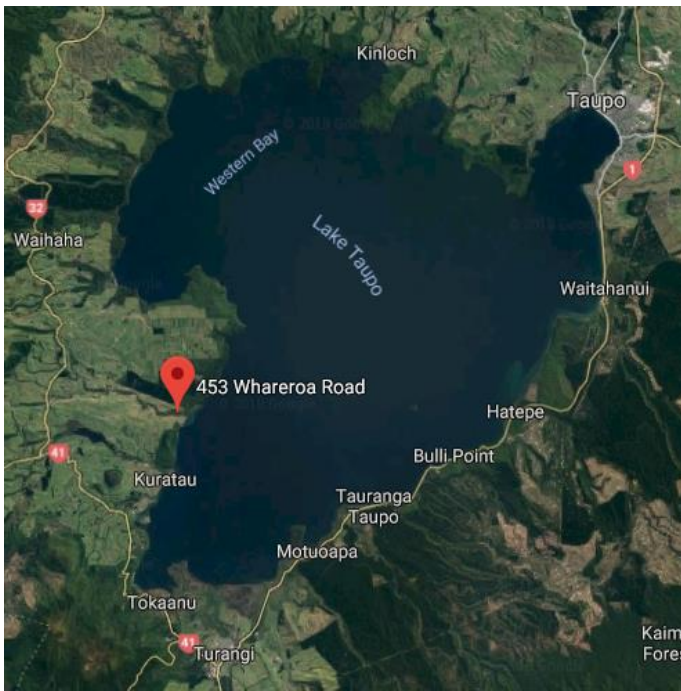
The current discharge consent AUTH113031 that authorises the operation of the Whareroa wastewater treatment plant (WWTP) expires on 29 April 2028. The purpose of the replacement application is to seek the ability to alter the site management methodologies and in doing so align the operations with Taupo District Council’s other land disposal sites across the district. Once the replacement consent application is determined TDC intends to surrender AUTH113031.

The applicant sought a 20-year term for the replacement consent at the time of application.

## 2 Background and Description of Proposal

### Community Setting:

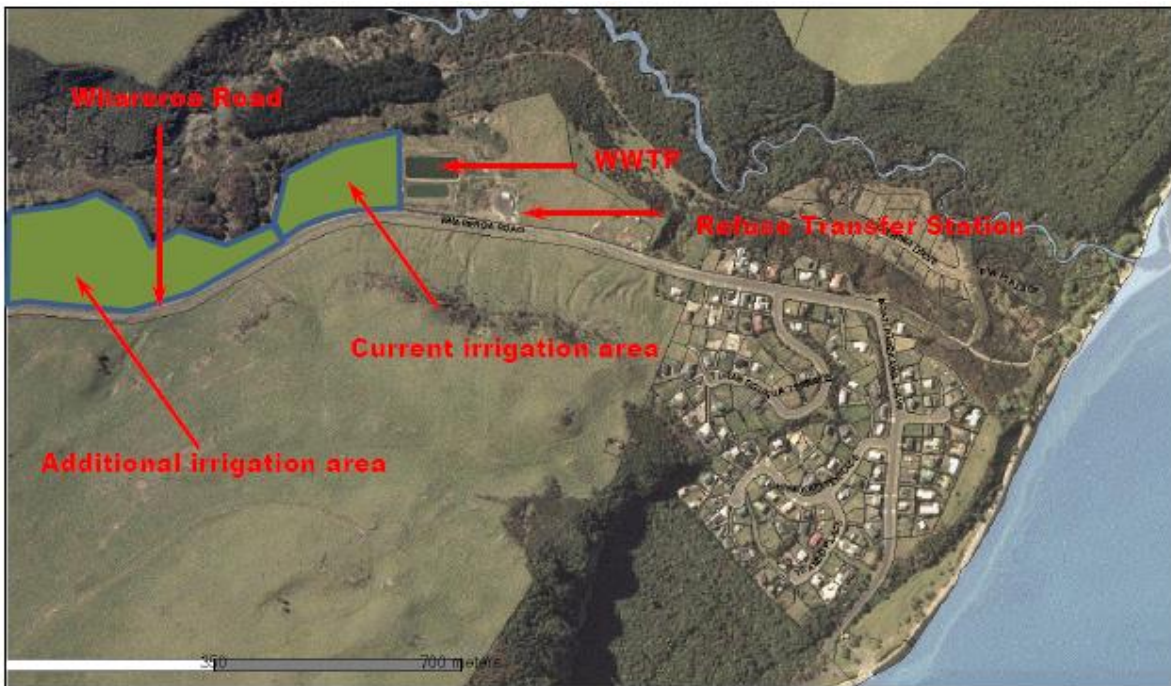
Whareroa is located on the western shore of Lake Taupo, approximately 32 kilometres north of Turangi (by road) and 80-90 kilometres from Taupo, depending on the route (See Figure 1). The settlement is accessed from Whareroa Road, which extends east from State Highway 41 for approximately 2 kilometres. The community comprises approximately 155 lots currently connected to the network.



**Figure 1: Whareroa General Location**

The Whareroa settlement is predominantly a holiday settlement on the western side of Lake Taupo with peak occupancy during the summer holiday season. The Whareroa village area is completely reticulated with the wastewater being pumped to WWTP located at 453 Whareroa Road. Currently all the development is on the southern side of the Whareroa Stream. The area to the north of the stream has been identified as a future growth area and is currently the subject of a private plan change.

The Whareroa WWTP is on the northern side of the road on approach to Whareroa, next to the Whareroa Refuse Transfer Station. The irrigation area is located immediately to the west of the WWTP, with the future expansion area further to the west. The location of the Whareroa WWTP is shown in Figure 2 below.



**Figure 2: Whareroa Settlement and WWTP**

The WWTP is located on a 3.9909 hectare lot legally described as Section 1 SO453358, while the additional irrigation area comprises 5.0621 hectares legally described as Section 3 SO453358. Both lots are owned by Taupo District Council. The surrounding land to the west and north is the Hauhungaroa Maori Land Block managed by Whareroa Station Incorporation.

**Proposed Development:**

**Whareroa South:**

The full development of Whareroa South will result in 202 connections – there are 47 vacant lots still to be developed.

**Whareroa North:**

A private plan change has been lodged with Taupo District Council to develop land north of Whareroa Stream, resulting in a potential further 170 lots.

## **2.1 Receiving Environment**

The topography is flat to gently rolling and bordered by Whareroa Road to the south, a steep tree lined gully on the north, farmland and trees to the west and the recycling centre to the east. The immediate receiving environment for the Whareroa wastewater discharge is the soils underlying the disposal area. These have been subject to investigation which confirms the presence of free draining coarse pumiceous sands and gravels.

The closest mapped water course is the Whareroa Stream located approximately 180m to the north down a steep escarpment from the treatment plant and irrigation areas. The stream flows from west to east and enters Lake Taupo approximately 1000m east of the disposal area; within Te Hape Bay. The Whareroa Stream is classified as a Trout and Indigenous Fishery and a Priority Stock Exclusion watercourse under the Waikato Regional Plan.

Water supply to the settlement is provided via a water bore (72\_237) and consent authorisation (121300) located at Ngati Parakewa Drive, on the foreshore of Lake Taupo. The water supply bore is 10.8m deep and has a static water level of 1.6m. The bore is located approximately 1000m south west of the wastewater disposal area at an elevation of 360m RL (approx.).

A monitoring bore was drilled in 2017 immediately down slope of the existing disposal area, with the WRC reference 72\_9818. This bore is 40.5m deep and has a static water level of 34m, and an elevation of approximately 390m RL.

The ultimate receiving environment for the discharged wastewater is the underlying groundwater and eventually, Lake Taupo. The high quality and clarity of Lake Taupo is valued both locally and nationally. The water quality of the lake is changing in response to a variety of land uses within the lake catchment. Nutrient induced changes in the lake water, particularly those associated with nitrogen sources have been observed. The Waikato Regional Council has policies and rules in place to limit the negative impacts associated with manageable nitrogen in the lake catchment. The application addressed by this report is subject to these policies.

Scientific evidence collected over the past 30 years indicates that the water quality of Lake Taupo is declining. Urban development and intensification of the surrounding rural land has increased the amount of nitrogen entering the lake through groundwater, rivers and streams. The increase in nitrogen entering the lake has led to enhanced algal and phytoplankton growth in the lake, and an overall decline in water quality. Policy development recognised that in order to halt the continued decline in water quality, controls needed to be placed on land use activities within the Lake Taupo catchment that contribute to the nitrogen load entering the lake.

## 2.2 Technical Aspects of the Proposal

### Existing Treatment System:

The Whareroa Wastewater Treatment Plant was constructed in 1986. The Whareroa treatment process is as follows:

- a) Raw wastewater from Whareroa Village is pumped from two pump stations up to near the treatment plant and it is then gravity fed to the plant.
- b) The wastewater is then fed through a screen to remove gross solids.
- c) The wastewater then enters the lined oxidation ponds where solids and biochemical oxygen demand (BOD) are removed. The primary oxidation pond has a surface area of 1,300m<sup>2</sup> and the secondary pond an area of 2,600m<sup>2</sup>.
- d) Pond treated effluent is then pumped out of the ponds to the disposal field.

The upper pump station consists of two pumps capable of pumping 10.3 l/s each and a 26m<sup>3</sup> storage tank while the lower station consists of two pumps capable of pumping 6.2 l/s each and a 22m<sup>3</sup> storage tank. The lower pump station pumps wastewater to the upper station from where it is pumped to the treatment plant – shown in Figure 3 below.



**Figure 3: Whareroa Wastewater Treatment Plant (Pond 1 at left, Pond 2 at right)**

Under the existing consent the treated effluent is required to be spray irrigated to 1.3ha of cropping land - see Figure 4. There is also a maximum limit of 1,500 m<sup>3</sup> per discharge event at an application rate not exceeding 40mm/day at an average of 12 day intervals. The consent conditions also limit the crop on site to Lucerne and do not allow for irrigation if heavy rain is forecast five days following the start of an irrigation event.



**Figure 4: Whareroa Irrigation Area – in Lucerne, 2017.**

### **Wastewater Characteristics – Current and Proposed Scenarios:**

Influent flow volumes, irrigation volumes and treated wastewater quality records have generally been kept in accordance with consent requirements with some technical faults causing loss of information. The influent data has been analysed by Jason Ewert of Great Lake Consulting Ltd. and used to determine the current and future loading characteristics described below, which were provided in November 2018 and supersede the details originally applied for and characterised in the AEE.

### **Nitrogen Benchmarking:**

*Whareroa wastewater treated effluent irrigation Benchmarking period 2001-2005*

Area	Values	Notes:
Number of lots connected	134	134 of 150 lots connected
Irrigation volume, m <sup>3</sup> /day (average)	28	
Irrigation volume, m <sup>3</sup> /year	10,212	Ref 2005 Annual report average
Average effluent N concentration, g/m <sup>3</sup>	17.5	Average 17.5 g/m <sup>3</sup> effluent N concentration for 01-05 records (Ref 2005 Annual report)
Mass of N discharged, kgN/yr	179	Calculated N loading

Since this time, an additional 5.06 ha of land has been acquired for the purpose of expansion of the disposal area when required. This land, in accordance with the permitted activity provisions for farmland has the ability to apply 75kgN/ha (refer 3.10.5.1 of the Waikato Regional Plan). This equates to an additional loading rate of 379.5kg of N being permitted over the entire site. As such a baseline nitrogen loading rate of 558.5kg N per annum for the benchmarking period is considered applicable to the land to which the consent application relates.

### **Current and Proposed Nitrogen Loading:**

*Current and Future Growth – Existing Sections*

Description	Current Situation	Future Growth – Existing Sections	Whareroa North PPC proposal
Number of lots connected	155	202	372
Irrigation volume, m <sup>3</sup> /day (average)	32.88	42.42	78.48
Irrigation volume, m <sup>3</sup> /year	12,001	15,483	28,645
Average effluent N concentration, g/m <sup>3</sup>	15.7 Ave past 5 years	25 conservative assumption	25 conservative assumption
Mass of N discharged, kgN/yr	188	387	716
<b>Balance N application</b>	<b>370.5 below benchmark</b>	<b>171.5 below benchmark</b>	<b>157.6 above benchmark</b>
<b>% change</b>	<b>66% below</b>	<b>31% below</b>	<b>30% increase*</b>

### **Summary:**

The applicant, in November 2018 proposed to revise the initial application to the following:

- A maximum loading rate per hectare of 200kgN/ha with an allowance for one occurrence of 250kgN/ha/yr within every 5-year period (application originally sought 400 kgN/ha/yr). Additional irrigation area is to be periodically brought on line to manage the loads.
- Retention of a maximum daily application rate of 200m<sup>3</sup>/day (application originally sought to discharge 252m<sup>3</sup>/day).
- Proffer an offset condition for increased nitrogen loading –should the Whareroa North Private Plan Change be successful, with an equivalent transfer being required to be secured via WRC consents processes to ensure that there remains a 20% reduction over the long term. The maximum limit of 446kg N for the site is based on 80% of the above benchmark loading for the site of 558.5 kg N/year.

### 3 Status of Activities under the Plans

Section 15 of the Resource Management Act 1991 (RMA) states that no person may discharge any contaminant into water or onto or into land, or any contaminant from any industrial or trade premises into air, unless the discharge is expressly allowed by a rule in a regional plan, any relevant proposed plan, or by resource consent.

Under the operative Waikato Regional Plan, the following rule applies to the discharge of treated wastewater to into land from municipal wastewater treatment plant operations:

*3.5.4.5 Discretionary Activity Rule – Discharges – General Rule*

*Any discharge of a contaminant into water, or onto or into land, in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water, that is not specifically provided for by any rule, or does not meet the conditions of a permitted or a controlled activity rule in this Plan, is a **discretionary activity** (requiring resource consent).*

### 4 Consultation/Affected Party Approvals

The AEE indicates that initial consultation was undertaken with the following parties:

- Bay of Plenty District Health Board
- Tuwharetoa Maori Trust Board
- Whareroa Village Residents Association
- Proprietors of Hauhungaroa No. 6
- Lakes and Waterways Action Group Trust

Written approval was provided by Mike Keys on behalf of the Proprietors of Hauhungaroa No. 6 and Steve Davis on behalf of the Whareroa Village Residents Association

### 5 Process Matters

The application was lodged on 11 May 2017. The application was placed on hold under s92(2) to allow technical review on 24 May 2017. The preliminary results of the technical review were forwarded to the applicant, who undertook further analysis, culminating in the revised proposal as described in the letter of 13 November 2018. Draft conditions were proffered to Waikato Regional Council on 19 December 2018 and the decision to process the application as non-notified was made on 8 January 2019.

### 6 Statutory Considerations

The application was lodged on 11 May 2017 and consequently all RMA amendments apply. The matters to which the Waikato Regional Council as the consent authority must have regard to when considering applications are set out in Section 104 of the RMA.

#### **Section 104 Consideration of Applications**

In summary, subject to Part 2 the following matters in Section 104(1) of the RMA are relevant to the consideration of the proposal.

*“(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to –*

- a) any actual and potential effects on the environment of allowing the activity; and*
- b) any relevant provisions of—*
  - i. a national environmental standard;*
  - ii. other regulations;*
  - iii. a national policy statement;*
  - iv. a New Zealand coastal policy statement;*
  - v. a regional policy statement or proposed regional policy statement;*
  - vi. a plan or proposed plan; and*
  - vii. any other matter the consent authority considers*

The following statutory instruments and policy documents have been considered in the evaluation of this application:

- Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007;
- The National Policy Statement for Freshwater Management 2014 (NPSFM);
- The Waikato Regional Policy Statement (WRPS);
- The Waikato Regional Plan (WRP); and
- The Ngati Tuwharetoa, Raukawa and Te Arawa River Iwi Waikato River Act, 2010

Due consideration has been given to Section 104 of the RMA. The actual and potential effects have been discussed in the sections below along with measures being taken to avoid, remedy or mitigate these effects.

Section 104(1)(a) provides that when considering a consent application, the consent authority must, subject to Part 2, have regard to the actual and potential effects on the environment of allowing the activity. Case law has determined that the "environment" must be read as the environment which exists at the time of the assessment and as the environment may be in the future as modified by the utilisation of permitted activities under the plan and by the exercise of resource consents which are being exercised, or which are likely to be exercised in the future. It does not include the effects of resource consents which might be sought in the future nor any past reversible effects arising from the consent being considered.

The area in the vicinity of the WWTP and disposal area has been modified. The site is surrounded by farmland and developed residential areas. Lake Taupo is a significant natural area. The quality of the local environment is high and in particular the very good quality of Lake Taupo water is of utmost importance when considering this application.

Section 104(2) provides that when forming an opinion about the actual or potential effects of the activity, the consent authority may disregard an adverse effect of the activity on the environment if the regional plan permits an activity with that effect.

In this case the permitted activity level of effects from the discharge to land is that allowed by permitted activity rule 3.5.7.6 of the WRP. This rule has an upper limit for secondary treated domestic wastewater of 3.0m<sup>3</sup>/day averaged over any one month.

In my opinion the permitted activity base level of effect accounts for very little given the discharge proposed is up to 200m<sup>3</sup>/day. Accordingly the PA base line level of effect is not discounted.

### **Section 105 Matters relevant to certain applications**

Furthermore, in relation to any discharge permits, Section 105(1) requires that the consent authority must have regard to a number of additional matters as follows:

- “(1) If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to—*
- (a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
  - (b) the applicant's reasons for the proposed choice; and*
  - (c) any possible alternative methods of discharge, including discharge into any other receiving environment.*



## **Section 107 Restriction on grant of certain resource consents**

Section 107(1) of the RMA restricts granting of certain discharge permits if, after reasonable mixing, the contaminants discharged are likely to give rise to any of the following effects in the receiving waters:

- (c) *the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;*
- (d) *any conspicuous change in the colour or visual clarity;*
- (e) *any emission of objectionable odour;*
- (f) *the rendering of fresh water unsuitable for consumption by farm animals;*
- (g) *any significant adverse effects on aquatic life.*

### **6.1 Assessment of Environmental Effect**

I consider the main actual and potential effects from this proposal to be:

- Impacts on nearshore surface water quality;
- Impacts on groundwater;
- Impacts on soils;
- Odour; and
- Public health effects.

The following sections consider each of these effects:

The applicant has provided information about the proposed discharge on the water quality and ecology of the receiving environment and Lake Taupo. The application has been reviewed by Waikato Regional Council Scientists Mr Bill Vant (water quality and nearshore effects), Mr John Hadfield (hydrogeology and groundwater effects) and Mr Matthew Taylor (soil effects). These assessments were predicated on the original AEE.

#### **6.1.1 Impacts on near shore surface water quality**

Based on the 2017 AEE Mr Vant noted that the load of Nitrogen entering Lake Taupo from all sources at that time was about 1200 t/yr (AEE p. 21). Therefore, the Whareroa discharge is a small fraction (<0.1%) of the combined load (and is also a small fraction of the manageable load). The proposed 2017 conditions implied that the combined load of N entering the lake would increase – albeit by a small amount. For example, the current load of about 0.2 t/yr might increase to about 0.6 t/yr (which is also <0.1% of the total load to the lake). As a result, the change represented by the 2017 AEE and conditions was likely to have a small additional adverse effect on the lake.

On the basis of the revised conditions which restrict the discharge to a maximum of 20% less than the baseline load of the existing WWTP and farmland which has now been retired, I conclude that the small additional adverse effect predicted above is less than minor.

#### **6.1.2 Impacts on groundwater quality**

Similarly to above, Mr Hadfield assessed the 2017 AEE and concluded that WRC monitoring noted that considerable denitrification may be available depending on the flow path of groundwater. The applicant has proffered conditions requiring a groundwater monitoring programme be undertaken and I conclude that this will provide the necessary information regarding groundwater effects, and any unexpected significant effects can be addressed via review conditions.

The release of nitrates directly to groundwater can raise concentrations to levels with a potential to exceed drinking water standards. The Ministry of Health drinking water standard for nitrate in water is 11g/m<sup>3</sup> nitrate nitrogen. Ammonia, which is highly soluble and easily leached into groundwater, is toxic to aquatic life. Both nitrates and phosphates in soil or groundwater can reach water bodies such as streams, ponds and lakes. These nutrients can stimulate increased plant and algae growth and when present in natural water are significant factors in eutrophication. The die-off of additional vegetation or algal growth in the water; a result of the increased nutrient load, is then decomposed by bacteria that

absorb oxygen in the water. This in turn has a significant impact on the degradation of water quality, and alters sensitive aquatic ecosystems.

Groundwater levels intersected in the monitoring bore adjacent to the irrigation area were in the order of 34m depth which is expected to provide opportunity for additional bacterial and pathogen die-off in unsaturated conditions along with mechanical filtration of contaminants prior to reaching groundwater.

### **6.1.3 Impacts on soils**

Mr Taylor held concerns regarding the 2017 AEE in respect to the proposed nitrogen loading rates to be discharged on the irrigation areas. Mr Taylor confirmed in an internal WRC meeting that he would consider 200 kgN/hectare/year an acceptable loading rate on the basis of sites with similar soils. As the applicant has proffered this loading rate (with occasional exceptions to allow for development of new irrigation areas), then I conclude the impacts on soils from the N load are expected to be less than minor.

Wastewater from domestic sources does not generally contain heavy metals and environmentally harmful compounds in concentrations likely to lead to soil contamination or problems that would render the soil unusable. It is considered that chemicals should be diluted and removed in the treatment system or renovated by the microbial action in the soil itself. Potential soil erosion as a result of the discharge is addressed by proffered conditions requiring regular inspections of the irrigation area and remedying of any problems observed. I consider that the discharge is unlikely to have any significant effects on the soils.

### **6.1.4 Odour**

There is potential for odour from the following sources:

- The inlet screen and screenings collection system;
- The oxidation ponds, if inadequate aeration or failure of the aeration system results in anaerobic conditions; and
- The irrigation system.

No odour complaints have been received by Waikato Regional Council in relation to the Whareroa WWTP over the period of the current consent.

I consider that the potential effect of odours from the WWTP is likely to be no more than minor. A general condition stating that odour should not cause an objectionable effect beyond the property boundary, as per the permitted baseline, is recommended.

### **6.1.5 Public health effects**

Wastewater discharges may contain very high concentrations of pathogens which may have human health related effects if people are exposed to the effluent. In terms of human health risk, the following issues are addressed:

- Drinking water contamination: as noted above the nearest water supply bore is approximately 1,000 metres east from the irrigation area, at an elevation approximately 30m lower than the irrigation area. Groundwater travel direction is thought to be to the north towards the Whareroa Stream rather than east towards the lake. Given the extent of unsaturated soil available prior to encountering groundwater, it is considered unlikely that significant numbers of pathogens from the wastewater irrigation area will survive to reach groundwater and then represent any significant contamination of the water bore after travelling 1000m.
- Aerosol production and inhalation: The irrigation system utilises sprinkler heads which minimise production of aerosols. The irrigation area is fully fenced and sign-posted to ensure public have no access to the site. Consent conditions proffered require that spray drift is avoided.
- Surface water contamination: The applicant indicates that the irrigation area is surrounded by cut-off drains to minimise the potential for overland flow onto or across the irrigation area. Conditions have been proffered which limit the conditions under which irrigation can occur and require no ponding or overland flow of wastewater to avoid any runoff effects. The Whareroa

Stream is located over 180m away and it is expected that given the high soakage capacity of the soils, overland flow to the stream is highly unlikely.

Overall, it is concluded that the potential adverse effects of the discharge on public health will be effectively avoided and mitigated by the proffered conditions of consent.

## 6.2 Policy Statements, Plans and Regulations

Section 104 of the Resource Management Act outlines those matters that the consent authority is to have regard to when considering an application for a resource consent, subject to Part 2.

Outlined below are the relevant matters within Section 104 and a discussion of how the applications at hand are regarded in relation to these matters. Please note that only the relevant sections or parts of sections, of statutory documents as applicable to this resource consent application have been discussed in this report.

### 6.2.1 Section 104(1)(b)(i) National environmental standards

As of 4 September 2018, there are six NESs that have come into effect - the National Environmental Standards for Air Quality (where various standards have been in effect since October 2004); Sources of Human Drinking Water; Electricity Transmission Activities; Telecommunication Facilities; Assessing and managing contaminants in soil to protect human health; and Plantation Forestry.

The relevant standards to this application are discussed below.

#### Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004 (including amendments 2005)

Government has released national environmental standards for ambient air quality (NESAQ) that specify concentration limits and in some instances allowable exceedances of those limits.

Regulation 17 of the NESAQ places restrictions over the granting of resource consents that authorise the discharge of PM<sub>10</sub> into airsheds that breach the ambient air quality. The "Rest of the Region" airshed is not considered to breach the ambient air quality standard therefore Regulation 17 of the NESAQ does not apply. Instead Regulation 18 applies.

Regulation 18 is repeated below:

- 18 Resource consents for PM10 discharges before 1 September 2013 if concentration in airshed does not breach standard
- (1) *This regulation applies to an application for a resource consent to discharge PM<sub>10</sub> into an airshed –*
    - (a) *where the concentration of PM<sub>10</sub> in the airshed does not breach its ambient air quality standard; and*
    - (b) *if the application is made before 1 September 2013.*
  - (2) *A consent authority must decline an application for a resource consent to which subclause (1) applies if the discharge to be permitted by the resource consent is likely, at any time, to cause the airshed to exceed the ambient air quality standard for PM<sub>10</sub>.*

The discharge to air associated with the WWTP is expected to have negligible effect on PM<sub>10</sub> concentrations both locally and on an airshed wide basis. Therefore I do not expect that the proposal will result in the ambient air quality standard for PM<sub>10</sub> to be exceeded in the "Rest of the Region" airshed or within the vicinity of the WWTP. Therefore the NESAQ does not restrict the granting of this consent.

#### National Environmental Standard for Sources of Human Drinking Water

The National Environmental Standard for Sources of Human Drinking Water commenced on 20 June 2008. This standard is a regulation enacted by an Order in Council, under section 43 of the RMA. The regulation requires that a regional council must not grant a water or discharge permit for an activity that will occur upstream of a drinking water abstraction point if specific criteria at the point of abstraction

are exceeded. The matters to be considered as part of an assessment are dependent on the permit being sought and the level of effects on any drinking water supplier located downstream or down gradient of the activity.

Under this regulation a regional council may also impose a condition of consent on any resource consent application requiring the consent holder to notify, as soon as reasonably practical, the registered drinking-water supply operators and the regional council if the activity leads to an event that, or as a consequence of an event, results in a significant adverse effect on the quality of the water at the abstraction point.

The discharge is located within the 2 kilometre buffer radius of the Taupo District Council managed Whareroa drinking water supply – G00378. Given the assessment of effects above, I consider it unlikely that the Whareroa WWTP discharge would cause a significant adverse effect on the quality of groundwater at the water supply take location. I do not consider it necessary to include a notification consent condition.

#### **6.2.2 Section 104(1)(b)(ii) Other regulations**

There are no other regulations relevant to this application.

#### **6.2.3 Section 104(1)(b)(iii) a National policy statement**

The National Policy Statement Freshwater Management 2014 came into effect on 1 August 2014. The policy statement sets out objectives and policies that direct local government to manage water in an integrated and sustainable way while providing for economic growth within set water quantity and quality limits.

The freshwater objectives seek to safeguard the life-supporting capacity, ecosystem processes and indigenous species, including their associated ecosystems of fresh water (Objective A1). This is to be achieved quantitatively through the sustainable management of taking, using, damming or diverting of fresh water, and qualitatively through the sustainable management of the use and development of land and of the discharges of contaminants.

The NPS requires regional councils to develop standards to safeguard the life supporting capacity of water bodies, with the objective that water quality will be maintained or improved (Objective A2). This will involve protection of high quality water bodies and implementation of methods to improve degraded water bodies. In the interim, when considering consent applications regional councils must have regard for any effects (actual or cumulative) that contaminants contained in the discharge may have on freshwater and fresh water ecology. The principle of adopting best practicable options in order to minimise effects is included in the decision making process under this policy.

I have had regard to the relevant objectives and policies within the National Policy Statement Freshwater Management 2014. I consider that given the proposed maintenance of the existing 20 percent reduction of nutrient load to land and my assessment of minor effects of the activity should the consent be granted it would not be contrary to this National Policy Statement.

#### **6.2.4 Section 104(1)(b)(iv) a New Zealand Coastal Policy Statement**

I do not consider the New Zealand Coastal Policy Statement applicable to the application.

#### **6.2.5 Section 104(1)(b)(v) Regional Policy Statements**

The Regional Policy Statement is a high-level broad-based document containing objectives and policies the purpose of which is to provide an overview of the resource management issues of the region and to

achieve integrated management of the natural and physical resources of the Region. Council's new RPS was made operative on 20 May 2016.

The key issues in the RPS relating to this proposal are the state of resources (Issue 1.1), the relationship of tangata whenua with the environment (Issue 1.5), and the health and well being of the Waikato River catchment (Issue 1.6). There are a number of overlapping objectives relevant to this proposal. These are listed as follows:

#### **Objectives**

- Integrated management (Objective 3.1);
- Resource use and development (Objective 3.1A)
- Decision making (Objective 3.2);
- Health and wellbeing of the Waikato River (Objective 3.3);
- Ecosystem services (Objective 3.7);
- Relationship of tangata whenua with the environment (Objective 3.8);
- Sustainable and efficient use of resources (Objective 3.9);
- Air quality (Objective 3.10);
- Mauri and values of fresh water bodies (Objective 3.13);
- Ecological integrity and indigenous vegetation (Objective 3.18);
- Amenity (Objective 3.20);
- Values of soil (Objective 3.24).

#### **Policies**

- Integrated management (4)
- Air (5)
- Built environment (6)
- Approach to identifying fresh water body values and managing fresh water bodies (8.1)
- All fresh water bodies (8.3)
- Catchment-based intervention (8.4)
- Waikato River Catchment (8.5)
- Landscape, natural character and amenity (12)
- Soils (14)

#### Policies and methods – matters of significance to Maori

Objective 3.8 seeks to recognise the relationship tangata whenua have with natural and physical resources. This is achieved by ensuring that the relationship tangata whenua have with their ancestral lands, water, sites, waahi tapu and other taonga is recognised and provided for in resource management decisions (Policy 4.3.2), and that particular regard is given to the role tangata whenua have as kaitiaki (Policy 4.3.3). Another objective (Objective 3.13) expects that tangata whenua concerns relating to the mauri and health of fresh water are recognised and provided for. This is achieved by ensuring decisions about the discharge of contaminants are made in a way that recognises and provides for the mauri of water.

The applicant has undertaken consultation with tangata whenua prior to and following lodgement of consent applications. I am of the opinion that the relationship tangata whenua have with the site and surrounding environs has been recognised. I consider that the applicant's proposal to maintain a nutrient load reduction, along with the land discharge methodology which I understand is consistent with Maori principles regarding wastewater management, addresses tangata whenua concerns regarding the discharge. Mana whenua through the Proprietors of Hauhungaroa No. 6 have provided written approval.

#### Policies and methods – Fresh water

In accordance with direction from the NPSFM, the RPS approaches the management of fresh water bodies (8.1) with a view to integrated catchment management, identification of fresh water body values, and establishment of fresh water body objectives, limits and targets, all via a collaborative approach. For all fresh water bodies (8.3) the RPS expects that the effects of activities will be managed

to maintain or enhance the identified values by reducing microbial and nutrient contamination (8.3 a iii)), and where appropriate, protection and enhancement of riparian habitat. I consider that the proposed maintenance of a 20 percent reduction in nitrogen loading, more efficient and comprehensive site management, and monitoring plans as proposed by the applicant, will contribute towards the maintenance and enhancement of the values of the Whareroa surrounds as required by Policy 8.3.

In terms of point source discharges (8.3.1) the RPS notes that regional plans shall control point source discharges of contaminants onto or into land where the contaminant may reach water, in a way that seeks to achieve the relevant targets for the water body and provides for mitigation or offsetting of adverse effects where effects cannot be avoided or remedied.

#### Policies and Methods – Catchment based intervention, Waikato River Catchment

Policy (8.4) makes provision for identifying high issue catchments including the Waikato River and Lake Taupo that require specific intervention to address the adverse effects of activities and land use changes. It enables specific policies for priority catchments such those now in place for Lake Taupo.

Methods 8.4.1 (Identify catchments for specific intervention) and 8.4.3 (Nutrient sensitive freshwater bodies), are very relevant in respect of discharges that occur in the Taupo Catchment.

Lake Taupo is identified as a category two lake having high condition and high vulnerability. Category two lakes tend to have water quality that has been impacted in some way by either catchment land use and/or introduced plants and/or animals. They make up a very small group of lakes that retain relatively clear water, macrophyte-dominated state. Due to a variety of existing or potential stressors they are considered to be very vulnerable to a change in state from clear water and vegetated to one that is algal-dominated and devoid of submerged macrophytes.

The Waikato River Catchment policy (8.5) recognises Te Ture Whaimana o Te Awa o Waikato – the Vision and Strategy for the Waikato River as the primary direction-setting document for the Waikato River and develop an integrated, holistic and co-ordinated approach to implementation.

The Vision and Strategy for the Waikato River through the Ngati Tuwharetoa, Ruakawa, and Te Arawa River Iwi Waikato River Act, 2010 has no direct bearing on the Whareroa WWTP application as the Act applies to areas of the Waikato River catchment below Huka Falls. The subject application is for a discharge that occur solely within the Lake Taupo catchment which is above the falls. The discharge however does eventually enter Lake Taupo which is the source of the Waikato, and so some minor cumulative input is recognised.

I consider that the wastewater discharge is not inconsistent with these policies and methods. As noted above expansion to the irrigation areas are proposed and will be required through the conditions of consent.

#### Polices and Methods air

Air quality in the Waikato Region is generally perceived to be high, but can be adversely affected by point source or cumulative discharges to air. Relevant policies in the RPS target the management of discharges to air (5.2) via regional plans and the assessment of unacceptable risk. Policy 5.3 seeks to manage adverse effects on amenity, particularly beyond the property boundary.

I consider that the discharge of contaminants to air proposed is consistent with the RPS.

#### Policies and Methods – soil

Policy (14.3) set out to ensure that accumulation of contaminants in soils are minimised and does not cause a reduction in the range of existing and foreseeable uses of the soil resource. Method (14.3.1) Control discharges to land, states that regional plans shall control discharges to land to ensure the accumulation of soil contaminants does not reduce the range of existing and foreseeable uses of the soil resource.

I consider that the discharge to land as proposed will not have adverse effects on the soils and so is consistent with the RPS.

#### **6.2.5.1 Summary**

It is not anticipated that there will be significant adverse environmental effects as a result of the proposed activity. I consider that the activity is consistent with the above objectives and policies of the RPS.

#### **6.2.6 Section 104(1)(b)(vi) Regional Plan**

The Waikato Regional Plan (WRP) contains specific policies and implementation methods to achieve the purpose of the RMA and address the significant resource management issues for the region identified in the Regional Policy Statement. The WRP objectives and policies relevant to this proposal are outlined below.

##### Management of Water Bodies

*Objective 3.1.2* sets out the desired endpoint for management of water bodies in the Region, including net improvement of water quality across the region, the avoidance of significant adverse effects on aquatic ecosystems, concentrations of contaminants leaching from land use activities to shallow groundwater and surface waters do not reach levels that present significant risks to human health or aquatic ecosystems, and that significant and cumulative adverse effects on the relationship tangata whenua as Kaitiaki have with water and their identified taonga. Relevant water management policies following on from *Objective 3.1.2* seek to characterise the water body based on the characteristics for which they are valued and enhance or maintain those characteristics through a mixture of regulatory and non-regulatory means.

Lake Taupo is classified as a “Contact Recreation”, “Significant Indigenous Fishery and Fish Habitat” and “Significant Trout Fishery and Trout Spawning Habitat” water body in the Waikato Regional Plan. The purpose of the classification system is to maintain or enhance existing flow regimes, water quality, and/or riparian and aquatic habitat based on the characteristics and values of the water body. As discussed in this report, I am of the opinion that the proposed discharges will not have significant adverse effects on water quality or aquatic ecosystems of Lake Taupo, over the course of the proffered and accepted consent duration of 20 years for the wastewater discharge consent.

##### Discharges to Land and Water

*Objective 3.5.2* focuses on discharges onto land and into water that could have adverse effects on water quality and aquatic habitat. This includes the discharge of treated wastewater onto land at the site. Similar to *Objective 3.1.2*, this objective seeks to manage discharges to ensure that contaminants entering surface water do not have adverse effects on human health and aquatic ecosystems. Policies of relevance include the following:

*Policy 2* states that discharges to water which have more than minor effects shall be controlled through resource consents to ensure that adverse effects on surface water bodies that are inconsistent with the Water Classification Standards are avoided as far as is practicable and otherwise remedied or mitigated.

*Policy 3* acknowledges that the discharge of wastewater onto land is the preferred alternative to direct discharges to water, where soil conditions and topography allow, and where adverse effects are less than those from a direct discharge to water. Applying wastewater to land allows available nutrients, minerals, and water to be reused in a beneficial manner.

*Policy 4* states that discharges to land shall be managed to ensure maximum reuse of nutrients and water contained in the discharge, avoid adverse effects on surface water bodies, and avoid contamination of soil, water and air.

Policy 5 states that discharges onto land shall not compromise potential uses of the groundwater or adverse effects on surface water.

WRP Section 5.2.2 sets out Council's objectives with respect to discharges of wastes onto land. The Objective is:

*Discharges of wastes and hazardous substances onto or into land undertaken in a manner that:*

- a) does not contaminate soil to levels that present significant risks to human health or the wider environment*
- b) does not have adverse effects on aquatic habitats, surface water quality or ground water quality that are inconsistent with the Water Management objectives in Section 3.1.2*
- c) does not have adverse effects related to particulate matter, odour or hazardous substances that are inconsistent with the Air Quality objectives in Section 6.1.2*
- d) is not inconsistent with the objectives in Section 5.1.2*
- e) avoids significant adverse effects on the relationship that tangata whenua as Kaitiaki have with their taonga such as ancestral lands, water and waahi tapu*
- f) remedies or mitigates cumulative adverse effects on the relationship that tangata whenua as Kaitiaki have with their identified taonga such as ancestral lands, water and waahi tapu.*

With respect to this consent application, I consider that Parts a, b, c, e, & f of Objective 5.2.2 are relevant. An explanation of those sections of Objective 5.2.2 which are relevant to the wastewater consent application is set out below:

The objective acknowledges that discharges onto land are a necessary facet of resource use in the Waikato Region and, subject to environmental standards, should be allowed to occur.

Part a) acknowledges that the discharge of chemicals onto or into land should not contaminate soils beyond specific threshold levels at which soil versatility declines and other adverse effects begin to occur. These thresholds represent the point at which the risks to human health or the wider environment from soil contamination become significant. If soils are contaminated above these levels, they will be considered unsafe for their current uses and the range of existing and foreseeable uses of the soil will be restricted. I consider that the proposed wastewater irrigation will not contaminate soils to the extent where the soil will become useable for normal agricultural or horticultural purposes for the consent duration of 20 years.

Parts b) and c) recognise the interconnected nature of the environment so that when managing discharges onto or into land, effects on water and air quality must also be taken into account. The effect of the irrigation on groundwater, surface water and air has been assessed in Section 6.1 of this report. Adverse effects on these resources are likely to be minor, if the irrigation is carried out in accordance with the recommended consent conditions.

Parts e) and f) acknowledge the relationship that tangata whenua as Kaitiaki have with their land over which they hold mana whenua. Activities involving discharges onto or into land need to avoid significant adverse effects on the relationship of tangata whenua with their identified taonga such as ancestral lands, water, and waahi tapu. The term 'significant adverse effects', are those effects that if allowed to occur, would destroy a site or taonga that is of such importance to tangata whenua as Kaitiaki that its loss or degradation is assessed to be unacceptable and unable to be remedied or mitigated. I consider that there will be no such significant adverse effects as a result of the irrigation.

#### Lake Taupo Catchment Policy

The policy originally referred to as 'Variation 5,' developed for the protection of New Zealand's iconic Lake Taupo, was informed by several decades of scientific research, stakeholder discussions, and community input. Prior to the policy, scientific evidence gathered over the past 30 years indicated that the water quality of Lake Taupo was slowly declining due to increased nitrogen inputs entering the Lake through groundwater and rivers, as a result of development and intensification of surrounding land.



In 2005, Council notified the policy for the protection of Lake Taupo. In June/July 2011, after 4 years of Council and Environment Court hearings and negotiations between key parties, Variation 5 was finalised and adopted by Council. Described as first-of-type policy, Variation 5 largely focuses on the management of non-point (diffuse) discharges from farming, through nitrogen discharge limits (or allowances) and a nutrient trading scheme. Recognising the contribution of nitrogen from wastewater sources, the policy also includes provisions for municipal and on-site wastewater discharges within the Taupo Catchment.

#### ***Lake Taupo wastewater policies and rules***

The policy for Lake Taupo also addresses nitrogen outputs from urban areas, namely wastewater discharges. These provisions broadly aim to reduce and control nitrogen outputs from wastewater systems in the catchment.

Key provisions in relation to wastewater discharges in the Taupo catchment include a policy which has established a 20% nitrogen reduction objective to be achieved by 2020 through plant upgrades and/or the reticulation of un-sewered communities.

I accept the information provided in the letter of 13 November 2018 and reproduced in section 2.2 of this report. This confirms that the current discharge represents a nitrogen load of 66% below that benchmarked and that full development of Whareroa South would still achieve the nitrogen reduction objective at 31% below the benchmark. Should the Whareroa North Private Plan Change occur, the mass of nitrogen discharged may exceed both the 20% objective and the benchmark itself. To account for this possibility, the 20% objective is included in the proffered consent conditions which limit the nitrogen load discharged to 446kgN/year (80% of the benchmarked 558.5kgN/year), with the additional note that this load may be offset through nitrogen trading, that is, the purchase and/or transfer of nitrogen from other sources within the Lake Taupo catchment.

#### **6.2.6.1 Summary**

Overall, I consider that the granting of this application would not, in my opinion, be inconsistent with the objectives and policies of the Waikato Regional Plan. Section 3 of this report summarises the relevant rules contained in the Waikato Regional Plan relevant to this proposal.

#### **6.2.7 Section 105 analysis**

In terms of alternative methods of disposal of wastewater, the applicant has concluded that land disposal of treated wastewater is currently the best practicable option given the potential adverse effects and cultural concerns of an alternative discharge to water. Land disposal also provides the ability to reuse nutrients present in the wastewater stream.

I have had regard to the receiving environment and the applicant's reasoning for the continued use of irrigation and therefore I am satisfied that the proposal is consistent with s105 of the RMA

#### **6.2.8 Section 107 analysis**

The discharges to land and water under consideration within this application have the potential to cause the effects in receiving waters listed in s107. However I accept that the conditions of consent developed throughout the process will avoid, remedy or mitigate these potential effects.

### **6.3 Other Matters**

#### **Ngati Tuwharetoa Environmental Iwi Management Plan 2003:**

The Ngati Tuwharetoa Environmental Iwi Management Plan (NTEIMP) establishes the Ngati Tuwharetoa environmental baselines and provides tools that will help hapu/whanau and the tribe as a whole to achieve and protect those baselines. The plan details goals, issues and policies/baselines within associated with kaitiakitanga, partnership, Te Waipuna Ariki (water), Papatuanuku (land), Nga Wahi Tapu (sacred places), Tauranga Ika (fisheries), Ahi Tamou-Nga Ngawha (geothermal), Te Ha Ranginui

(airspace), and Nga Otaota Me Nga Aitanga Kararehe (flora and fauna). I consider that the proposal is consistent with the outcomes and aspirations of the Ngati Tuwharetoa Environmental Iwi Management Plan.

#### **6.4 Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010**

The application is outside the area covered by this Act.

#### **6.5 Protected Customary Rights and/or Customary Marine Titles (Marine and Coastal Act 2011 (Takutai Moana))**

The application is outside of the area covered by this Act.

#### **6.6 Relevant Part 2 Considerations**

Under section 104(1) of the RMA, when considering an application for resource consent the consent issuing authority must have regard to Part 2 of the RMA. Part 2 sets out the purpose and principles of the RMA. Relevant Part 2 considerations (section 5 – 8) are outlined below.

- Purpose (5)
- Matters of National Importance (6)
- Other Matters (8)
- Treaty of Waitangi (9)

Each section has been considered in relation to this application. I have had particular regard to the importance of Lake Taupo as a matter of national importance and the fact that the wastewater plant is within the rohe of Ngati Tuwharetoa. I have had particular regard to the fact the discharge occurs in a catchment of National Importance with specific policies in place to improve the high quality water of Lake Taupo. The Vision and Strategy for the Waikato River has also been regarded as the discharge is a small but never the less a cumulative input into the wider river catchment.

I conclude that the activities proposed are not contrary to Part 2 matters.

### **7 Discussion/Conclusion**

Taupo District Council has applied for a resource consent associated with the discharge of treated wastewater from the Whareroa Wastewater Treatment Plant. The proposal is a discretionary activity and accordingly has been considered under section 104B of the RMA.

Section 104B states:

*“After considering an application for resource consent for a discretionary activity or non-complying activity, a consent authority –*

- (a) may grant or refuse the application; and*
- (b) if it grants the application, may impose conditions under section 108.”*

During this assessment, I have considered the following:

- Effects of the proposed activities;
- Consistency of the activities with relevant policies and plans; and
- Consistency of the activities with Part 2 of the RMA.

As discussed in section 6.1 of this report the actual and potential effects of the proposed activities are considered to be minor. If the activity is undertaken in accordance with the proposed conditions, the proposed activity will be consistent with Waikato Regional Council’s policies and plans, and with matters under Part 2 of the RMA.

Waikato Regional Council technical staff have assessed the proposal in terms of actual and potential environmental effects. The conclusions of the technical reviews indicate that the discharge is likely to have an adverse effect on surface water quality, groundwater quality, and soils that is minor or less than minor.

The application has been assessed in the context of each of the matters set out in Part 2 of the RMA. I consider that generally the application has had regard to the matters set out in each of these sections.

I have assessed the application against the objectives and policies within the Regional Policy Statement, Regional Plan, and the Ngati Tuwharetoa Environmental Iwi Management Plan. I consider that the application does not compromise the objectives and policies within these documents.

I have assessed the application against section 105(1) and 107 of the RMA. I am satisfied, from the advice received from Waikato Regional Council technical staff, that the discharge is unlikely to have any significant adverse effect on the water quality within Lake Taupo and that the grant of this consent is not precluded by section 107 of the RMA.

I consider that the proposal provides for positive effects on the regional economy, and the overall wellbeing of the local community.

In weighing these considerations, it is my opinion that it would better achieve the purpose of the Act as defined in section 5 of the RMA, to **grant** consent to enable the continued operation of the Whareroa Wastewater Treatment Plant.

The applicant has proffered and I have proposed a number of conditions of consent to safeguard the life-supporting capacity of water and ecosystems, and to avoid or mitigate any adverse effects of the activities on the environment.

The applicant stated a preferred duration of 20 years for the wastewater discharge consent. I concur that this is an appropriate term, in line with many other municipal wastewater discharges and recommend a term of 20 years with an expiry date of 31 January 2039.

## 8 Monitoring

Waikato Regional Council has a statutory obligation under section 35 of the RMA to monitor the effects of resource consents being exercised in its region. Waikato Regional Council staff or authorised agents will monitor the wastewater treatment plant and discharge to land during operation. It should be noted that if a condition(s) of consent is not complied with, the wastewater treatment plant or discharge may receive an elevated level of monitoring until Waikato Regional Council is satisfied that the consents are being exercised in accordance with consent conditions.

A range of consent conditions have been proposed either by the applicant or by council staff and these are summarised below:

- Limits on volume and N load to be discharged
- Limits on conditions under which irrigation may occur
- Water quality and quantity monitoring:
  - Discharge quality on a fortnightly basis
  - Discharge volume, influent volume and flow rate on a daily basis
- Receiving environment (groundwater and soils) monitoring and reporting
- Reporting of wastewater quality and volume on a quarterly basis, to ensure that if any problems are occurring on site, Waikato Regional Council is aware of these in a timely fashion.
- Annual summary reporting of treatment plant performance.
- The preparation and updating of an Operation and Management Plan is also covered by conditions.
- Conditions relating to the recording and reporting of complaints associated with any odour or the discharge have been included.
- Should any unforeseen adverse effects as a result of this activity become apparent through monitoring, a review clause allows conditions of consent to be reconsidered.

## 9 Recommended Decision

I recommend that in accordance with s104B resource consent application APP138347 be granted in accordance with the duration and conditions prescribed in the attached Resource Consent Certificate for the following reasons:

- The activities will have no more than minor actual or potential adverse effects on the environment
- The activities are not contrary to any relevant plans or policies
- The activities are consistent with the purpose and principles of the Resource Management Act 1991



Trisha Simonson  
Consultant  
On behalf of Resource Use

**Date: 24 January 2019**

## 10 Decision

That the resource consent application is granted in accordance with the above recommendations.



Hugh Keane  
Team Leader  
Resource Use Directorate

**Date: 24 January 2019**

Acting under authority delegated subject to the provisions of the Resource Management Act 1991 which at the time of decision had not been revoked

# RESOURCE CONSENT CERTIFICATE

**Resource Consent:** AUTH138347.01.01

**File Number:** 60 54 64A

*Pursuant to the Resource Management Act 1991, the Regional Council hereby grants consent to:*

Taupo District Council  
Private Bag 2005  
Taupo Mail Centre  
Taupo 3352

(hereinafter referred to as the Consent Holder)

**Consent Type:** Discharge Permit

**Consent Subtype:** Discharge to land

**Activity authorised:** To discharge treated municipal wastewater to land and associated contaminants to air, from the Whareroa wastewater treatment plant.

**Location:** Whareroa Rd - Whareroa

**Map reference:** NZTM 1840359 E 5695308 N

**Consent duration:** This consent will commence on the date of decision notification and expire on 31 January 2039.

**Subject to the conditions overleaf:**

## CONDITIONS

### General:

1. The wastewater treatment and disposal system shall be designed, operated and maintained in general accordance with:
  - (i) "Whareroa Wastewater Treatment Scheme - Application for Resource Consent to Waikato Regional Council" Opus International Consultants Ltd., May 2017 (Waikato Regional Council Doc Ref 10428437); and
  - (ii) "Whareroa Wastewater Treatment Plant Consent Replacement Application" Taupo District Council, 18 November 2018 (Waikato Regional Council Doc Ref 13374457)subject to the resource consent conditions below, which shall prevail should any inconsistency occur between the conditions and the application documents.
2. The consent holder shall pay the Waikato Regional Council any administrative charge fixed in accordance with section 36 of the Resource Management Act 1991, or any charge prescribed in accordance with regulations made under section 360 of the Resource Management Act 1991.

### Discharge quantity

3. The maximum volume of treated wastewater discharged to the ground must not exceed 200 cubic metres per day (200 m<sup>3</sup>/day).

### Discharge quality

4. The consent holder must ensure that the quality of the treated wastewater discharged to the ground will result in compliance with the following limits:

- a) The annual total nitrogen loading rate (based on average fortnightly TN sampling results x daily irrigation volume x total irrigable land area) must not exceed 250kg TN per year per hectare for the year commencing 1 July and ending 30 June, for one year in every five years (consecutively);

**Note:** Part a) of this condition is to allow for the opportunity to expand irrigation areas when discharge flows reach the upper limits of the land area and does not authorise non-compliance with part b) for any other reason.

- b) At all other times, the annual total nitrogen loading rate (based on average fortnightly TN sampling results x daily irrigation volume x total irrigable land area) must not exceed 200kg TN per year per hectare for the year commencing 1 July and ending 30 June;
- c) The daily loading rate must not exceed 15 mm depth of wastewater per day based on total irrigated area;
- d) The annual total nitrogen load discharged must not exceed 446 kilograms TN per year for the year commencing 1 July and ending 30 June.

**Note:** The annual load limit specified in part d) of this condition may be increased by offset by the consent holder securing an equivalent nitrogen offset within the Lake Taupo catchment and providing evidence of such to Waikato Regional Council.

5. The land disposal area must be increased as necessary to ensure ongoing compliance with the requirements of condition 4 and in accordance with the requirements for ensuring an appropriate Operations and Management Plan for the site.
6. No later than 2 years from commencement of this consent, the application of treated wastewater to land at Whareroa Road must not occur when any of the following environmental conditions exist:

Description	No irrigation conditions
Rainfall Intensity	>0.5mm/minute for greater than 20 minute duration
Wind Speed	exceeds 12 metres per second (at a height of 1.2 metres above ground).
Frost/temperature	<-5 degrees

7. Wastewater shall be applied in a manner that complies with the following conditions:
- a) Avoids overland flow of wastewater to any neighbouring property, flowing watercourse, drainage ditch which contains water, or permanent pond
  - b) Avoids detectable spray drift beyond the boundaries of the property
  - c) Ensures distribution as evenly as practicable over the irrigation areas in use
  - d) Avoids significant ponding.

**Note:** significant ponding is deemed to occur where waste water remains on an area of more than 10 square metres after 24 hours of being irrigated or causes an adverse effect on grass growth.

### Site Management

8. The consent holder must develop and retain an Operations and Management Plan for this site. This Plan shall be prepared by a suitably qualified and experienced person and shall detail how the treatment and disposal system is to be operated and maintained to ensure compliance with the conditions of this consent. As a minimum the Plan shall include the following matters:

- a) A comprehensive description of the treatment and disposal facility,
- b) Chain of command, responsibility and notification protocols including operation and maintenance of the transfer pipeline to the site,
- c) Operational management of the irrigation system;
- d) A description of maintenance and improvements undertaken to the treatment plant and disposal system,
- e) A description and schedule of the routine inspection, monitoring and maintenance procedures to be undertaken to ensure effective plant operation;
- f) Procedures for recording routine maintenance and all repairs that are undertaken
- g) Reporting procedures including an annual monitoring report,
- h) Contingency measures to address unusual events,
- i) Procedures for improving and/or reviewing the Operations and Management Plan.
- j) Measures to:
  - i. ensure the renovation of contaminants and uptake of nutrients from the wastewater is maximised and the extent of nutrient, and in particular nitrogen, leaching to groundwater is minimised
  - ii. ensure the sustainability of the soil resource and
  - iii. maintain the soil's natural infiltration capacity and structure as much as practicable

This Plan shall be lodged with Waikato Regional Council for approval in a technical certification capacity within six months of commencement of this consent, and shall be reviewed and updated every five years and as required as a result of any changes in plant operation or management. An electronic copy of the management plan shall be provided to Waikato Regional Council within 10 working days of a request to do so.

9. The wastewater scheme must be operated, maintained and managed by appropriately experienced personnel in accordance with the Operations and Management Plan pursuant to condition 8 of this consent.
10. The consent holder must ensure contractors are made aware of the conditions of this resource consent and shall take all reasonable steps to ensure contractors are able to comply with those conditions.

**Note:** An example of a reasonable step to ensure contractors are able to comply with the conditions is to require them to be fully conversant with the Operations and Management Plan required by Condition 8.

11. There must be no overland flow of wastewater from any part of the treatment plant or disposal system.
12. The land disposal area must not be grazed by stock, and crop grown in the irrigation area must be harvested and removed from the irrigation area.
13. The consent holder must inspect the property at a minimum of monthly intervals and as soon as practicable after heavy rainfall events, to record the presence or not of erosion rills or gullies, tomos, seepages, or any other physical change to the property which may impact on the irrigation area or accelerate nutrient losses, and shall keep records of those inspections.
14. Any erosion control works recommended as a result of the inspections required by condition 13 must be undertaken at the expense of the consent holder to the satisfaction of Waikato Regional Council.
15. The consent holder shall maintain and keep a Complaints Register for all complaints made about the treatment and discharge operations received by the consent holder. The Register shall record:
  - a) The date, time and duration of the alleged event/incident that has resulted in the complaint;
  - b) The location of the complainant when the alleged event/incident was detected;
  - c) The possible cause of the alleged event/incident;
  - d) The weather conditions and wind direction at the site when the event/incident allegedly occurred, if significant to the complaint;
  - e) Any corrective action undertaken by the consent holder in response to the complaint.

The Register shall be made available to the Waikato Regional Council at all reasonable times. Complaints which may indicate non-compliance with the conditions of this resource consent shall be forwarded to the Waikato Regional Council within 5 working days of the complaint being received.

### **Odour Management**

16. The operation, management and maintenance of the Whareroa Wastewater Treatment and Disposal Scheme must not result in any objectionable odours which have an adverse effect at or beyond the boundary of the properties on which the treatment plant and disposal areas are located.
17. There must be no discharge of airborne contaminants as a result of the activities authorised by this resource consent to the extent that it causes an adverse effect at or beyond the boundary of the properties on which the treatment plant and disposal areas are located.
18. If an emission of odour occurs that has an objectionable or offensive effect (in accordance with condition 16 above), the consent holder shall provide a written report to the Waikato Regional Council within ten days of being notified of such by the Waikato Regional Council. The report shall specify:
  - a) the cause or likely cause of the event and any factors that influenced its severity;
  - b) the nature and timing of any measures implemented by the consent holder to avoid, remedy or
  - c) mitigate any adverse effects; and
  - d) the steps to be taken in future to prevent recurrence of similar events.



### **Wastewater monitoring**

19. The consent holder must continuously monitor the flow rate of wastewater entering and leaving the treatment plant and must record the total daily influent and irrigation event discharge volumes.
20. The quality of the treated wastewater discharged into the ground must be determined by the consent holder. To this end the consent holder must monitor the following parameters: total nitrogen (TN), ammoniacal-nitrogen (NH<sub>4</sub>-N), nitrate-nitrogen (NO<sub>3</sub>-N), total phosphorus (TP) suspended solids (SS), 5 day carbonaceous biochemical oxygen demand (cBOD<sub>5</sub>), *Escherichia coliform bacteria (E.coli)* and chloride (Cl) to the satisfaction of the Waikato Regional Council. The monitoring programme must measure:
  - (i) the concentrations of these parameters in the effluent measured at fortnightly intervals,
  - (ii) minimum and maximum daily concentrations, and monthly average concentrations based on fortnightly monitoring intervals,
  - (iii) minimum and maximum daily mass loads, and monthly average mass loads based on fortnightly monitoring intervals,
  - (iv) the mass of total nitrogen discharged from the plant per annum, based on the average fortnightly mass load and discharge flow, or part thereof at the time of reporting.
21. The consent holder shall define a sampling location or locations and the sampling method or methods to be used for monitoring the parameters in condition 20. The location(s) and method(s) used for the sampling shall be to the satisfaction of the Waikato Regional Council acting in a technical certification capacity.
22. All wastewater quality analyses shall be undertaken by an IANZ accredited or equivalent laboratory. All methods used shall be appropriate for the wastewater analyses undertaken.

### **Receiving environment monitoring and reporting**

23. The consent holder must develop and retain a monitoring programme to evaluate the environmental effects of this effluent discharge. This programme shall be undertaken to the satisfaction of Waikato Regional Council and shall include the following:
  - (i) Groundwater quality and contaminant migration monitoring, which shall comprise a minimum of one down-gradient monitoring piezometer,
  - (ii) Monitoring of groundwater samples taken from the piezometers shall be carried out on a quarterly basis. The groundwater samples shall be analysed for nitrate-nitrogen (NO<sub>3</sub>-N), nitrite-nitrogen (NO<sub>2</sub>-N), Ammoniacal-nitrogen (NH<sub>4</sub>-N), conductivity (COND), *Escherichia coliform bacteria (E.coli)* and chloride (Cl),
  - (iii) Groundwater levels shall be monitored in the monitoring piezometers on a quarterly basis.
24. To the satisfaction of Waikato Regional Council the consent holder must undertake soil testing annually at the same time each year as recommended by the New Zealand Fertiliser Manufacturers Association. Soil testing will also be undertaken before sowing and cultivation to ensure there is sufficient time to apply and incorporate fertilisers to address any deficiencies (if required). The soil will be analysed for macro and micro nutrients, pH, cation exchange capacity and organic matter. Analyses shall be undertaken on composite samples on each site and sampling depths of 0-75 mm and 75-100 mm.

### **Reporting**

25. The consent holder must forward the results of the monitoring undertaken pursuant to conditions 19 and 20 to the Waikato Regional Council, via electronic means, on a quarterly basis.
26. The results of the monitoring described by conditions 23 and 24 of this consent shall be provided to the Waikato Regional Council annually by 30 September, in an agreed analysed report and data form unless otherwise agreed to in writing by Waikato Regional Council.

27. The consent holder shall provide to the Waikato Regional Council a written report by 30 September each year, addressing the following:
- (i) A summary of all monitoring results required by conditions of this resource consent for the year ending 30 June;
  - (ii) Critical analysis of the monitoring data collected and comments on any emerging trends;
  - (iii) Comment on compliance with the conditions of this resource consent;
  - (iv) Comment on the performance and adequacy of the disposal system, matters of compliance;
  - (v) Comment on the effects of the discharge on ground and surface water;
  - (vi) Any reasons for non-compliance or difficulties in achieving compliance with the conditions of this resource consent and a description of and a summary of the efficacy of any remedial works undertaken; and
  - (vii) Any other issue considered relevant to the consent holder.
28. The consent holder must notify the Waikato Regional Council within 24 hours (where practicable) of the consent holder becoming aware of any occasion when the limits specified in conditions 3 and 4 of this resource consent being exceeded, or any accidental discharge, plant breakdown or other circumstance which is likely to result in the limits of this consent being exceeded. The consent holder shall, within 10 working days of the incident occurring, provide a written report to the Waikato Regional Council, identifying the non-compliance, possible causes and steps to ensure future compliance, which may include but not be limited to an investigation of the treatment plant operation and capabilities, bore monitoring and the implementation of remedial action to prevent recurring non-compliance.

#### **Review**

29. The Waikato Regional Council may during 2024, 2029, and 2034 serve notice on the consent holder under section 128(1) of the Resource Management Amendment Act 1991, of its intention to review the conditions of this resource consent for the following purposes:
- i) To review the effectiveness of the conditions of this resource consent in avoiding or mitigating any adverse effects on the environment from the exercise of this resource consent and if necessary to avoid, remedy or mitigate such effects by way of further or amended conditions; or
  - ii) To review the adequacy of and the necessity for monitoring undertaken by the consent holder and specifically to review the frequency of record keeping and the method of record collection for the purposes of determining the most appropriate method and frequency; or
  - iii) To add or amend consent conditions in light of monitoring results and/or changed environmental conditions, to require the holder of this resource consent to adopt the best practicable option to remove or reduce adverse effects on the surrounding environment.

**Note:** Costs associated with any review of the conditions of this resource consent will be recovered from the consent holder in accordance with the provisions of section 36 of the Resource Management Act 1991.

*In terms of s116 of the Resource Management Act 1991, this consent commences on 24 January 2019.*

## Statutory Advice Notes

- In accordance with section 125 RMA, this consent shall lapse five (5) years after the date on which it was granted unless it has been given effect to before the end of that period.
- This resource consent does not give any right of access over private or public property. Arrangements for access must be made between the consent holder and the property owner.
- This resource consent is transferable to another owner or occupier of the land concerned, upon application, on the same conditions and for the same use as originally granted (s.134-137 RMA). The transfer of water, including changes of location, may occur as provided for in Chapter 3.4 of the Waikato Regional Plan, subject to the requirements of those rules.
- The consent holder may apply to change the conditions of the resource consent under s.127 RMA.
- The reasonable costs incurred by Waikato Regional Council arising from supervision and monitoring of this/these consents will be charged to the consent holder. This may include but not be limited to routine inspection of the site by Waikato Regional Council officers or agents, liaison with the consent holder, responding to complaints or enquiries relating to the site, and review and assessment of compliance with the conditions of consents.
- Note that pursuant to s332 of the RMA 1991, enforcement officers may at all reasonable times go onto the property that is the subject of this consent, for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.
- If you intend to replace this consent upon its expiry, please note that an application for a new consent made at least 6 months prior to this consent's expiry gives you the right to continue exercising this consent after it expires in the event that your application is not processed prior to this consent's expiry.