

Before the Independent Hearing Panel  
at Taupo

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*in the matter of:* Proposed Plan Change 36 to the Taupo District Plan –  
Request under Schedule 1 of the RMA to rezone  
Rural Land to Residential at Whareroa North by The  
Proprietors of Hauhungaroa No. 6

*to:* **Taupo District Council**

*Applicant:* **The Proprietors of Hauhungaroa No.6**

Statement of Evidence by **Michael Keys** on behalf of The Proprietors of Hauhungaroa No.6

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Date: 29<sup>th</sup> April 2020

## 1. INTRODUCTION

### *Name and qualifications*

- 1.1. My full name is Michael Keys. I am director of KeySolutions (2005) Ltd and hold a Bachelor of Engineering degree with Honours from Canterbury University
- 1.2. I have worked for KeySolutions (2005) Ltd for 14 years as a civil engineering consultant assisting potential developers with subdivisional proposals and also consulting to Taupo District Council (**Council**) regarding development applications (reporting to Council staff, Council Hearings, Commissioner Hearings and the Environment Court).
- 1.3. From 1975 through to 2006 I was employed by the Taupo Borough Council and the Taupo District Council in various engineering roles, the last 13 years as District Engineer (Works Manager). Over that time, I was involved to varying degrees with most of the new development within the District.
- 1.4. I confirm that I have read the “Code of Conduct for Expert Witnesses” contained in the Environment Court’s Consolidated Practice Note 2014 and agree to comply with them in giving evidence in this proceeding. Except where I state that I am relying on evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

## 2. EXECUTIVE SUMMARY

- 2.1. This District Plan Change Application is the end result of many years of planning and consultation. In terms of the provision of engineering infrastructure to provide for the development, there has been an extremely positive and collaborative approach with engineering staff at Taupo District Council (**Council**) over that time. The gifting of land to improve wastewater treatment efficiency and seeking resource consents which allow for growth at Whareroa North are just two examples of this productive relationship. It has benefitted both parties.
- 2.2. During my employment with Council up until 2006 I viewed this development as unique in many ways, particularly the focus of the developers, Hauhungaroa #6 Trust (the **Owners**) on the long-term big picture. Having left Council employment, I was pleased to be asked to assist the Owners with their development aspirations.
- 2.3. The investigation work and reporting that has got us to this point is extensive and I am very confident that from an engineering perspective, the development proposal, as detailed in the application and in the further information supplied to Council, is realistic and appropriate.
- 2.4. Again, from an engineering perspective, I see two main issues where there is disagreement between the Council and the Proponents, or a view that further clarity is needed before the Panel

could make a decision. These are the timing of geotechnical investigations and the legal mechanism for securing public access and services for the crossing of the Whareroa Stream.

- 2.5. With respect to the timing of the further geotechnical investigations, Mr Phadnis states the view in his evidence that it is better (for a number of reasons detailed in his evidence) that investigation of the whole site (including the access corridor and the bridge site) be completed at one time, prior to the preparation of the subdivision consent application. He also believes that, considering the investigations and reporting done to date with respect to geotechnical issues, we have sufficient confidence that any unforeseen issues that become apparent from the further investigations will be resolvable. He goes on to say that whilst draft guidelines suggest that deep investigations should be completed prior to the Plan Change stage, he does not see this as necessary in this case. I agree with both those points of view.
- 2.6. With respect to the issue of securing the proposed stream crossing (public and services/utilities) within a legal instrument that is acceptable to all parties, the Proponents agree unreservedly that this guarantee is necessary. At time of writing this evidence, some progress has been made on achieving agreement between the relevant parties as to a suitable mechanism that can be used in this circumstance and this is covered in the legal submissions.

### **3. BACKGROUND**

- 3.1. My involvement with this development proposal began in February 2007 when I was engaged by Hauhungaroa #6 Trust (the **Owners**) to assist (in a liaison and facilitation capacity) with gaining the necessary approvals for the expansion of the existing Whareroa Village across the Whareroa Stream and onto the high ground to the north. I have been involved with the project continuously since February 2007.
- 3.2. Prior to that time, in my roles with Council, I had reviewed and approved the on-going development at Whareroa from the provision of community infrastructure perspective.
- 3.3. It was my view (from a Council perspective) that the Owners' philosophy differed from most of the other developers in the district at the time in that they consistently maintained a long-term view. They also sought excellent outcomes in all respects, not just financial. For this reason, I was pleased to be asked by the Owners to assist them once I had left Council employment.

### **4. PLAN CHANGE 36: WHAREROA**

#### ***Engineering Work Completed prior to Plan Change Application***

- 4.1. The application for Plan change 36 was lodged with Council in December 2017 and it details (amongst other things) the extensive engineering investigations, assessments, calculations, estimates, comparisons, agreements and reviews that had been completed at that stage. See Appendix 3 of the application; *Whareroa North; Application to Change Taupo District Plan; Infrastructure Report; 7<sup>th</sup> December 2017*. You can view this report at:

<https://www.taupodc.govt.nz/repository/libraries/id:25026fn3317q9slqygym/hierarchy/Council/Consultation/Whareroa%20North%20Plan%20Change/Section%201/E%20Appendix%203%20%20Infrastructure%20Report%20KeySolutions%20Ltd%20%28A2107133%29.pdf>

- 4.2. It also details the co-operative and mutually supportive nature of the relationship between the Owners and Council's Infrastructure Team in developing the servicing requirements for this project. This is an approach that I had not seen from developers elsewhere during my 40 years in Taupo district. An example of this is the vesting of extra land by the Owners (at no cost to Council apart from the actual vesting process) to give Council the ability to meet increasingly stringent wastewater resource consent conditions with respect to nitrogen discharge to the environment. These wastewater requirements are explained further in section 7.
- 4.3. Submitters have raised issues relating to different access options for the development and also whether community infrastructure can cope with the extra demand from development at Whareroa North. A considerable amount of investigation has been carried out regarding these issues and is described in detail in the Plan Change Application documents and also in subsequent work carried out in response to the Request for Further Information (**RFI**) from Council dated 15<sup>th</sup> February 2018. More commentary is given in response to these submissions in subsequent sections of this evidence.

#### ***Further Investigation since the Plan Change Application was lodged***

- 4.4. Further engineering work has been carried out since December 2017 (when the Plan Change Application was lodged) with respect to geotechnical analysis, stormwater methodology, infrastructure efficiency and potential legal mechanisms and/or instruments for the proposed bridge across the Whareroa Stream. That has included the following assessment and reports which have been provided to Council and are part of the Plan Change application process:
- Further geotechnical assessment was carried out by Cheal Consultants in 2018 and detailed in a report dated 18<sup>th</sup> October 2018. This work is considered in detail in Mr Phadnis's evidence.
  - A report "*Whareroa North - Infrastructure efficiency – potential costs to the community*" was prepared by KeySolutions and dated 28<sup>th</sup> September 2018.
  - More consideration was also given to potential stormwater methodologies that could be applicable to this site and a *Preliminary Stormwater Assessment*, dated 26<sup>th</sup> September 2019 was completed by Cheal Consultants. This work is considered in detail in Mr Kelly's evidence and also referred to in Mr Phadnis's evidence due to the interrelated nature of geotechnical issues and stormwater methodology.

## **5. ACCESS**

- 5.1. Since well before the first residential section was created at Whareroa in the 1980s, further expansion of the village to the north of Whareroa Stream was envisaged and planned for. It was anticipated that it be accessed by extending Whareroa Road, bridging the stream and "sidling"

up the south facing slope to the flatter area above. The legal road reserve is in place as an extension of Whareroa Road (at location “D” on the aerial photograph below) to facilitate the first section of this access on the southern side of the stream. Apart from roading, other services (including wastewater, water and power) have also been led to this location for extension up to development at Whareroa North.

- 5.2. The Owners signalled in 2016 that they needed it confirmed that this was still the best option for gaining access for the new development. Earlier (2007), both Blance and Associates and Apex Consultants had investigated bridging options and in 2016, KeySolutions built on this earlier work and carried out comparisons of several other options as well. All this investigation work is included as Appendices B and D of the Infrastructure Report referred to in section 4.1 of this evidence.<sup>1</sup>
- 5.3. To summarise this work, in order to maintain connectivity between the existing urban development at Whareroa and the new development area to the north and to keep the length of new roading required to a minimum, 6 options were analysed and compared. The location of these stream crossing options are shown below (which is an extract from the May 2016 Discussion Paper referred to in 5.2).



- 5.4. All of these options involve the construction of a bridge to cross the Whareroa Stream. Avoiding a stream crossing and accessing the new development from north of the stream (as suggested in the WRC submission and in the submissions of: R and A McCoubrie; and I Sutcliffe) would instead involve over 10km of new roading from SH32 or approximately 5km of new roading (across land

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<sup>1</sup> KeySolutions, Dec 2017; Whareroa North, Infrastructure Report: Appendix 3 of Initial Application.

owned by others) from Karangahape Road. Either of these other options are considerably more expensive, less efficient in terms of roading and would also leave development at Whareroa North as an “island” with no connectivity to the existing Village. Further, access options from north of the stream would not provide a corridor for extending water supply, wastewater reticulation and utility services to serve Whareroa North either. For all of these reasons in my view it is neither reasonable nor practicable to access the site from the north.

- 5.5. The Discussion Paper and Supplementary Paper (see section 5.2) conclude that access for development at Whareroa North is best achieved (as originally anticipated in the 1980s when consent was gained in 1990 from the Waikato Valley Authority for a stream crossing at this location) by extending Whareroa Road across the Whareroa Stream at point D. The access would then sidle up around the south facing slope in an easterly direction, and loop around to the flatter area above.
- 5.6. The engineering issues and feasibility of this proposed access corridor (including the proposed bridge) is discussed further in the evidence of Mr Phadnis and mitigation of the visual impact of this work is discussed in Ms Monzingo’s evidence. In my view, from a roading asset and engineering perspective, this new access road, together with the bridge, will provide a unique and attractive “gateway” to the new development, once the planting has become established.
- 5.7. The development proposal is unusual in that it involves the initial construction by the Owners of approximately 500 metres of access road (including a bridge) which doesn’t provide direct frontage for new sections, it only facilitates access (and a services corridor) to the development area above. It is an “upfront cost” that the Owners face (and accept) without gaining any immediate financial return for the investment. However, as mentioned in section 3.3, the Owners have always maintained a long-term view and they see this as an integral part of this special development proposal.
- 5.8. As detailed in the application, much of this access corridor is across land identified as a “Significant Natural Area” (**SNA**) in the Taupo District plan. For this reason, in order to minimise disturbance, discussions have previously been held with Council’s Infrastructure staff regarding what the acceptable cross section of this access road might be. I believe both parties accept that strict compliance with Council’s Code of Practice for Development of Land (September 2009) (**CoP**) as to paved width, berm widths and overall geometry would not be the best approach in this situation and consultation on this aspect of the project is continuing. The CoP is understandably pitched at development in the “typical” situation with respect to ground contour. This access road will be traversing relatively steep ground and I believe that, in this case, constructing a narrower carriageway and berms (than the CoP specifies) produces a more appropriate outcome. As mentioned above, I believe that Council’s Infrastructure staff accept this approach.
- 5.9. Pedestrian and cyclist access to Whareroa North will be provided via a separated path on the bridge and continuing through the bush as shown on the “Appendix 8” Concept Plan **attached** to this evidence as **Appendix A**. This will provide an excellent recreation opportunity not only for the residents of Whareroa North but also for those in the existing part of the Village.

## **6. GEOTECHNICAL**

- 6.1. As discussed in Section 4.5 above, additional on-site geotechnical assessments were carried out by Cheal Consultants in 2018, subsequent to the lodging of the Plan Change application. This was carried out by Mr Andres Martinez who has since left the employment of Cheal Consultants. For this reason, Mr Harshad Phadnis joined the Project Team in 2019 to provide specialist geotechnical advice.
- 6.2. I am reliant on his expertise with respect to the geotechnical aspects of this application as my knowledge of the behaviour of pumice soils found in the Taupo District has only been gained from my observations during my 45 years engineering career in the district, and not from any specialist qualifications.
- 6.3. In that context, and from what I have seen during my many visits to the site since 2007, I believe that there will be an engineering solution available for any unexpected geotechnical conditions/situations/problems, unknown at the present time, that become apparent during the further investigation proposed prior to applying for subdivision consent (refer to Mr Phadnis's evidence for the detail of this proposed testing and analysis).
- 6.4. There has been some discussion with Council advisors regarding the possibility of doing some deep drilling investigations at an early stage. In my view, a number of factors have a bearing on how to best optimise the timing for the geotechnical investigation that is described in Mr Harshad's evidence. This extensive work (required prior to the subdivision application being prepared at the latest) involves taking a sophisticated rig to the site and testing in a sufficient number of locations (and to a sufficient depth in the case of core recovery drilling) to provide enough data to prepare a statistically acceptable description of the subsoil conditions. These investigation sites need to include the future residential area and also the access corridor and bridge site. In my view, it would be both economically and practically preferable to do all this work in one "package".
- 6.5. This will be an expensive exercise, I expect it to be well into 6 figures. The investigation will involve firstly the gaining of resource consent to disturb vegetation in the SNA to carry out the testing in the access corridor, then the testing itself which involves getting the equipment to site and then possibly getting it into position with a helicopter after individual test site preparation. The test results will then be collated and analysed by geotechnical specialists and conclusions drawn.
- 6.6. I strongly believe that not only should all this investigation be done at one time as suggested in 6.4, but given Mr Harshad's view (and, as stated earlier, I support that view) that there is no indication that there will be insurmountable geotechnical problems with the project, then the Owners should have the confidence that goes with having an appropriate zone in place in the District Plan before commissioning that investigation.

## **7. INFRASTRUCTURE CAPACITY AND EFFICIENCY**

## **Roading**

- 7.1. Access to Whareroa Village is from State Highway 32, Kuratau Hydro Road and Whareroa Road. Kuratau Road and Whareroa Road traverse mainly flat rolling country and visibility is good over much of their combined length. Seal width averages 6 metres and adequate “at grade” berm width exists over most of this roading. There are some short sections in cuttings where berm widths are less than a metre but given the present (and anticipated future) low pedestrian and cyclist traffic numbers, this is not considered a safety issue. I do not know the numbers for non-vehicular usage, but given the remoteness of Whareroa, I expect it would be very light.
- 7.2. I believe that the existing Kuratau Hydro Road and Whareroa Road provide an acceptable level of service for accessing both the existing village and the anticipated expansion into Whareroa North. Ms Connelly’s evidence details the history of this roading and it is worthy of note that the Owners funded the construction of the whole length of Whareroa Road (and a half share of upgrading the existing Kuratau Hydro Road) prior to the village being developed with the expectation and understanding that it would ultimately serve both sides of the Whareroa Stream. She points out that it was “built to State Highway standards” of the time and I am of the view that it is still “fit for purpose” today. A study of the intersection of Kuratau Hydro Road with SH32 (by Gray Matter Ltd and dated 13<sup>th</sup> November 2017) is included in the application and doesn’t flag any safety concerns.
- 7.3. Guidelines for normal urban development indicate that individual allotments can generate 8 vehicle movements per day. Whareroa’s remoteness however would intuitively suggest that traffic generation here will be much less. Being a remote (mainly) holiday destination and a Village with no shop (or commercial outlet of any kind), I believe holiday makers arrive well provisioned and have little reason to leave their property in their vehicle except perhaps to take their boat down to the ramp. In any case, the grocery shop is not “just down the road” at Whareroa so a provisioning trip (or any trip) is likely to be a more considered excursion. The roading in the existing village is built to a good geometry and standard and can easily cater for the low number of existing movements plus the extra demand from development at Whareroa North.
- 7.4. As discussed in section 5 of this evidence, it is proposed that Whareroa Road be extended across the Whareroa Stream and up to the development site to a standard that is acceptable to Council and also in a way that minimises the environmental impact of this work. Currently, discussions are taking place with the Tuwharetoa Maori Trust Board (**TMTB**) (as owners of the stream bed) and Council as to what an acceptable legal status of the bridge itself might be (i.e. acceptable to TMTB, Council and the Owners).
- 7.5. Separated pedestrian and cyclist linkage will also be provided to Whareroa North which will create new recreational opportunities for all residents and visitors. (Refer to Appendix A).



7.6. A preliminary layout of Internal roading proposed for Whareroa North is shown in the Concept Plan (Appendix A). This is designed to follow the existing ground levels as much as possible to minimise earthworks and to provide for a good section layout. This will be refined at the subdivision consent stage, and will be designed in accordance with the CoP in consultation with Council.

### ***Water Supply***

7.7. Council applied to the Waikato Regional Council (**WRC**) in 2010 for a renewal of its water “take” consent for the Whareroa community supply. The supply is fed from an underground gallery arrangement at the lake edge. The application made provision for not only the existing needs but also the demand anticipated from Whareroa North since Council’s Infrastructure staff are in regular liaison with the project team.

7.8. WRC granted that consent (#121300). It authorises Council to take up to 682m<sup>3</sup> per day from the gallery and expires on 31<sup>st</sup> January 2033. There are no onerous or unusual conditions attached to #121300 and compliance is easily achievable even when Whareroa North is fully developed and occupied.

7.9. Reticulation will be extended by the Owners under the deck of the bridge and up the access corridor and it is anticipated that a “Deed of Arrangement” will be agreed between Council and the Owners regarding the methodology and funding of upgrades to the network as a result of the demand requirements of Whareroa North.

### ***Wastewater Management***

7.10. At the time that the application for Plan Change 36 was lodged, Council (with the support of the Owners) had applied for a replacement resource consent to authorise the treatment and disposal of wastewater from Whareroa (including Whareroa North). The replacement consent was sought because the existing consent (although still current) included conditions regarding the operating regime which in reality made the treatment process more difficult to optimise.

7.11. That replacement consent was granted in 2019 (#AUTH138347.01.01) and has an expiry date of 31<sup>st</sup> January 2039. The new consent has conditions similar to the other land-based treatment and disposal schemes that Council own and operate. This standardisation across the schemes creates efficiencies for operational staff and makes it easier to get the best out of each of the systems.

7.12. The report by WRC that determined that this consent be granted clearly signals that the existing community wastewater scheme will cater for development north of the stream as well as the existing village. A snapshot of part section 2 of that report is shown below:

**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.

7.13. Consent #AUTH138347.01.01 has 29 consent conditions which cover discharge quantity and quality, site management, odour management, wastewater monitoring, receiving environment monitoring, reporting and reviewing. It is of relevance when considering several of the submissions that condition 7 of the consent (with respect to the application of treated wastewater to the ground) states: -

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.

7.14. I have reviewed the comprehensive consent compliance report prepared by WRC for the year ending 30<sup>th</sup> June 2019 and have **attached** the summary letter as **Appendix B**. It signals that the treatment and disposal operation has a status of “Full Compliance” with only two minor administrative matters to be attended to.

7.15. This background information informs me that wastewater management at Whareroa is being operated well, is performing to expectations, complies with statutory requirements and confirms that allowance has been made to accommodate wastewater generated from future development at Whareroa North.

7.16. As with water supply, reticulation will be extended by the Owners under the deck of the bridge and up the access corridor and it is anticipated that a “Deed of Arrangement” will be agreed between Council and the Owners regarding the methodology and funding of network and treatment upgrades required as a result of the loading from Whareroa North.

***Stormwater Management***

7.17. Mr Tony Kelly’s evidence details the approach, assumptions, further investigation required and consultation with Council Infrastructure staff with respect to stormwater management for

the proposed development. It also provides supporting information for his Preliminary Stormwater Assessment.

7.18. It is my belief that, with respect to stormwater management, the proposed development will improve the status quo. Stormwater flows will not exceed the current scenario and erosion at the existing scar will be arrested.

7.19. I note that in Section 3.4 of its submission WRC confirms that “WRC is also comfortable with the proposal to incorporate best practice stormwater design into the proposed development”

### ***Infrastructure Efficiency***

7.20. The economic aspects of this proposal have been researched and reported in depth during this Plan Change process. Addressing the high-level engineering aspects of these economics, I prepared a report “*Whareroa North - Infrastructure efficiency – potential costs to the community*” dated 28<sup>th</sup> September 2018, and this was included with the further information submitted to Council on 3<sup>rd</sup> October 2018.

7.21. I state the view in that report that *“any subdivision of land involves the creation of extra infrastructure to service that development. There will be extra operation and maintenance costs associated with this additional infrastructure to serve Whareroa North, but this development will also provide another 160 “customers” to pay for this.”* My view is that development at Whareroa North is not very different in terms of economic impact on Ratepayers from expansion elsewhere in the district. In saying that, there is one unusual aspect of this development, and that’s the need for a bridge and access road to the development proper. This is discussed further in 7.24, 7.25 and 7.26 below.

7.22. It is obvious that the “beneficiaries” of water supply and wastewater schemes can be identified easily, they have a connection point at the boundary of their property. Council targets the collection of rates from those “customers”. This is the normal “user pays” principle.

7.23. In the case of water supply and wastewater, there is an argument that enlarging the service areas provides economies of scale. This is not significant for wastewater because all community wastewater schemes in Taupo district are funded as if they were one scheme, but in the case of water supply, development of Whareroa North will provide significant economies of scale, and all else being equal, should result in a rate reduction.

7.24. With respect to roading, it is impossible to be absolutely specific about the “beneficiaries” of the network. Everyone is free to use any part of the network at any time (within certain conditions and not during Alert Level 4 Lockdown!). Council therefore funds the roading program from a district wide rate, everyone pays a small share of maintaining and improving the district network. They don’t pay for expansion of the network for subdivision purposes, developers pay this cost.

7.25. Given that roading is considered a network for usage and funding purposes, it is understandable that there will always be sections which are heavily used and sections which are lightly used. And there are portions of the network serving few customers and portions serving many customers. This is the nature of most networks, not just roading.

7.26. I therefore believe that the proposed development at Whareroa North, whilst being unusual with respect to the need for a bridge and access road to the development proper, should not be viewed any differently from other development in terms of the need to fund roading maintenance. Ratepayers will see very little change because Whareroa North will be such a small portion of the total network, and in fact economies of scale, cost effectiveness and general infrastructural efficiency all have the potential to increase as a result of the expansion of Whareroa.

## **8. S42a REPORT AND ATTACHMENTS DATED 22<sup>ND</sup> APRIL 2020**

### ***Water Supply (Attachment I)***

8.1. I have reviewed the evidence of Mr Swindells and agree with his comments and conclusions.

8.2. He seeks (in section 17b) quantification of the water supply upgrades necessary to cater for the extra demand from Whareroa North and I agree that upgrades are necessary but believe that determining the cost is more appropriately done once the Plan Change has been approved.

8.3. As stated in section 7.9 above "...it is anticipated that a "Deed of Arrangement" will be agreed between Council and the Owners regarding the methodology and funding of upgrades to the network as a result of the demand requirements of Whareroa North." I believe this is the best way forward.

8.4. He states in section 24 of his evidence that the required upgrade of the headworks could be combined with planned treatment improvements to meet DWSNZ and I agree that this is a very sensible approach.

8.5. With respect to his sections 27 and 28 regarding extending reticulation across the Whareroa Stream, please refer to section 8.17 of my evidence below.

### ***Wastewater Management (Attachment I)***

8.6. I have reviewed the evidence of Mr Cordell and concur with his findings and conclusions (except as detailed in 8.14 below)

- 8.7. He advises in section 35b) of his evidence there are at least two options available should the permitted annual nitrogen application limit (446kg/year) be threatened and I agree with that.
- 8.8. I also note that I don't believe that this nitrogen cap will be threatened. The reason that I have come to this conclusion is that the full resource consent compliance report dated 14<sup>th</sup> October 2019 (**attached** as **Appendix C**) states in section 4b that the current application of nitrogen is 70kg/year.
- 8.9. Given the current annual nitrogen discharge of 70kg, the resource consent limit of 446kg/year should be easily achievable once Whareroa North is developed, even if removal efficiency drops. And as Mr Cordell advises, there are other mechanisms to meet this condition should that prove necessary.
- 8.10. The Owners appreciate the acknowledgment from Mr Cordell (section 46 in his evidence) describing the vesting of land in Council from Hauhungaroa #6 for wastewater treatment.
- 8.11. Mr Cordell seeks (in section 35c) quantification of the wastewater upgrades necessary to cater for the extra demand from Whareroa North. I agree that upgrades are necessary but believe that determining the cost is more appropriately done once the Plan Change has been approved.
- 8.12. As stated in section 7.16 above ".....it is anticipated that a "Deed of Arrangement" will be agreed between Council and the Owners regarding the methodology and funding of network and treatment upgrades required as a result of the loading from Whareroa North." I believe this is the best way forward.
- 8.13. With respect to his sections 52 and 53 regarding extending reticulation across the Whareroa Stream, please refer to section 8.17 of my evidence below.
- 8.14. With respect to his conclusion 54b), I don't agree that it's a certainty that the annual Nitrogen limit would be breached with the addition of Whareroa North onto the network (see 8.9 above), but agree with him that "there are alternative ways of addressing this" should this be the case.

#### ***Stormwater Management (Attachment I)***

- 8.15. I have reviewed the evidence of Mr Stokes and concur with his findings and conclusions.

#### ***Transport (Attachment J)***

- 8.16. I have reviewed the evidence of Mr Hansson and agree with his comments, opinions and conclusions.

8.17. With respect to his section 1.5c regarding extending public access across the Whareroa Stream (and also Mr Swindell’s and Mr Cordell’s comments regarding the extension of services), as discussed in 7.4 above, currently discussions are taking place with the Tuwharetoa Maori Trust Board (**TMTB**) (as owners of the stream bed) and Council as to what an acceptable legal status of the bridge itself might be (i.e. acceptable to TMTB, Council and the Owners). The laying down of a “Maori Roadway” is being explored and this is detailed in Legal Submissions.

8.18. With respect to his section 10.1b (“Develop a pedestrian and cyclist connectivity plan that clearly states what pedestrian linkages and other provisions are proposed for this project”), please refer to the Proposed Appendix 8 for the District Plan. This includes a Concept Plan which shows the general location of a proposed pedestrian and cyclist path connecting the two halves of the Village. The design details of this linkage will be agreed with Council prior to the subdivision consent application being lodged.

## 9. SUBMISSIONS

My comments regarding specific submissions are below:

| Submitter             | Submission Points   | Rebuttal                      |
|-----------------------|---|-------------------------------|
| Colman, Robert and Jo | <p><u>Wastewater</u></p> <p>Current services such as the wastewater system already “struggle to cope” in the summer months.</p>   | Refer to sections 7.10 – 7.15 |
| Ewan, Rob             | <p><u>General</u></p> <p>Concern about the added pressure that new housing would place on facilities.</p> <p>Concern about the adverse impact on the quality of the lake and stream.</p>  | Refer to section 7            |
| Ewen, Dr Ruth & Simon | <p><u>Wastewater</u></p> <p>Application suggests that existing waste water facilities will be used. The Taupo District Council Asset Management Plan wastewater 2018 states in appendix L re Whareroa scheme that “The Whareroa North development comprising of 170 potential lots is being proposed, which</p> |                               |

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|  | <p>will require a wastewater treatment facility', that is, in addition to the existing facility.</p> <p>Further submitted that when all the dwellings at Whareroa are occupied the current sewerage ponds get very full and odorous. Concern raised that if the facility is shared with a new subdivision, the potential for spillage into stream and lake is very high, causing degradation of the environment.</p>   | <p>Refer to sections 7.10 – 7.15</p> <p>Refer to sections 7.10 – 7.15</p>                         |
| <p>Harding C,<br/>McCoubrie R<br/>&amp; A (by D<br/>Drayton)</p> | <p><u>General infrastructure</u></p> <p>Submitted that the proposed development provides for too many sections to be created. No consideration of the impact upon the community infrastructure and facilities, such as the boat ramp, the lake foreshore, or the safety of Whareroa Road.</p> <p>Whareroa Road is narrow and winding with no kerb and channel, which already creates safety issues as it is used by vehicles, cyclists and pedestrians.</p> <p><u>Roading</u></p> <p>Submitted that the proposed position of the access road will have a significant impact upon two of the parties included in this submission, as it will greatly increase the traffic in the vicinity of their houses, impacting upon their existing amenity and enjoyment of their properties.</p> | <p>Refer to sections 7.1 – 7.3</p> <p>Refer to sections 7.1 – 7.3</p> <p>Refer to section 7.3</p> |
| <p>Lawton, Edward</p>  | <p><u>Wastewater system</u></p> <p>There is a risk that the increased pressure on the sewerage system may cause flooding of the stream.</p>  | <p>Refer to sections 7.10 – 7.15</p>  |
| <p>Lawton, Raenea</p>  | <p><u>Roading</u></p> <p>Bought land at Whareroa in 1996 as part of stage 4. Since then stages 5, 6 and 7 have been developed and the Whareroa settlement remains the same. A second road is needed to accommodate the further increase of 160 sections. A further road could be constructed in</p>  | <p>Refer to sections 5.1 – 5.9</p>  |

|                                  |   |   |
|----------------------------------|---|---|
|                                  | <p>the stage 6 development, up behind the tennis courts and then adjoining Whareroa Road out of the Whareroa settlement.</p>  |   |
| Sutcliffe, Ian                   | <p><u>Roading</u></p> <p>The development intended would be better served by access via the land to the south, from State Highway 32.</p> <p>The location and alignment for the proposed road connecting Whareroa North to Whareroa village has not been sufficiently analysed as to the effects on the amenity of the existing village, and the resultant traffic implications.</p> <p><u>Wastewater</u></p> <p>The proposal contains insufficient information outlining the capacity and capability of using the existing sewage system for Whareroa North.</p>              | <p>Refer to sections 5.1 – 5.9</p> <p>Refer to section 5 and sections 7.1 – 7.3</p> <p>Please refer to sections 7.10 – 7.15</p> |
| Waikato Regional Council (“WRC”) | <p><u>Coordinated growth and infrastructure</u></p> <p>WRPS Policy 6.1 requires that subdivision, use and development of the built environment, including transport, occurs in a planned and coordinated manner.</p> <p>The development is contingent on road access and therefore options should be proposed and considered through the application. Given the potential impact the access will have on the SNA, ONF and the Whareroa Stream it would be preferable that alternative access route options are investigated, including from the north of Whareroa Stream.</p> | <p>Please refer to section 5.4</p>  |
| Miller, Michael                  | <p>The plan change will cause overcrowding of Whareroa facilities and result in increased road traffic. There will also be increased pressure on infrastructure.</p>  | <p>Refer to section 7</p>   |

## 10. CONCLUSIONS



10.1 Considerable engineering work had been completed to date to support the planning initiative of growth at Whareroa North. All this work has signalled that development in the manner proposed is feasible.

10.2 At the time the first sections were created in the existing village, the best access to the northern side development was considered to be as proposed at present. Several studies over the last 30 years have not changed that conclusion.

10.3 The wider roading network and the local roading network have the capacity to carry the extra load imposed from development at Whareroa North. Traffic impacts will be insignificant, and there are no safety issues that need addressing.

10.4 Walking and cycling opportunities will be enhanced in the area once Whareroa North is developed and good “connectivity” will be available.

10.5 Whilst no deep geotechnical investigations have been carried out at the development site yet, from the work done to date, it is my belief that an engineering solution can be found to address any geological conditions likely to be encountered.

10.6 The existing Whareroa community water supply can be extended to serve Whareroa North and the consent authorising the “take” of that water, which expires in 2033, provides for the extra demand from Whareroa North.

10.7 The existing Whareroa community wastewater scheme can be extended to serve Whareroa North and the consent authorising the discharge of treated wastewater to the environment, which expires in 2039, provides for the extra demand from Whareroa North. The current system is meeting all the required statutory requirements.

10.8 Stormwater solutions to be put in place as part of the development at Whareroa North will better manage rainfall runoff from the development site and also provide a means of arresting the erosion which is currently occurring on the escarpment below the “bowl” area.

10.9 It is accepted that further geotechnical investigations and consultation with Council’s Infrastructure staff are required and these will be advanced once the Plan Change has been approved.

***Michael Keys***

***Date: 29<sup>th</sup> April 2020***