BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY THE NORTHLAND REGIONAL COUNCIL

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of applications by Far North District Council for resource consents associated with the operation of the East Coast Bays Wastewater Treatment Plant

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STATEMENT OF EVIDENCE OF BARRY SOMERS FOR FAR NORTH DISTRICT COUNCIL

10 JUNE 2019

Qualifications and Experience

1 My full name is Barry John Somers

2 I have over 40 years' local government engineering experience. I have spent the last 25 years specialised managing all aspects of community wastewater and water supply schemes. I am not a registered engineer and gained my experience through being actively involved at a senior level with all aspects of the waters industry, as well as specific qualifications and training, including NZCE Civil, C Grade wastewater operators training, and attending multiple courses and conferences.

3 I am an Assets Manager – 3 Waters at Far North District Council. I have held this position for 6 years and for the first 5 years I was the sole 3 Waters Asset Manager. This is a senior role and I am responsible for all aspects of Northland's water activities excluding daily operations and physical works project delivery. My responsibilities include renewal and new works scoping and planning, preparation and maintenance of the Asset Management Plans, developing and maintaining financial forecasting, preparation of Long Term Plan and Annual Plan information, community consultation and analysing data to monitor trends.

4 Prior to working for Far North District Council, I worked as a Project Manager for Tauranga City Council where I undertook a number of waste water projects. My major project in that time was project-managing the Southern Pipeline project from concept through to obtaining the consents to enable construction. This was a highly controversial 14-kilometre $110 million-dollar wastewater pipeline. Prior to Tauranga, I worked for Hauraki District Council for 18 years in which I had various roles including Borough Engineer for Waihi, Area Engineer, Manager of the construction workforce and Utilities Manager looking after water supplies, sewerage schemes, stormwater and land drainage.

Code of Conduct

5 I confirm that I have read the Code of Conduct for expert witnesses in the Environment Court Practice Note 2014 and that I have complied with it when preparing this evidence.

Scope of my evidence

6 In my statement I will cover the following matters:

- Overview of the East Coast wastewater scheme;
- The Council's Long-Term Plan 2018-2028;
- Rates affordability in the Far North District; and,
- The history of consultation with tangata whenua.

Overview of the East Coast wastewater treatment scheme

7 The East Coast wastewater scheme was constructed in the late 1980s and services the urban coastal areas of Mangonui, Coopers Beach, Cable Bay and Taipa. The wastewater treatment plant for the East Coast scheme is located in Taipa and is referred to as either the "East Coast wastewater treatment plant" or the "Taipa wastewater treatment plant". The East Coast wastewater scheme caters for black (toilet waste) and grey water (kitchen, bathroom, laundry) only - it is not designed to accommodate stormwater runoff.

8 The scheme was installed in the late 1980s to eliminate wastewater pollution that was occurring in the waterways and on the beaches in this area. The scheme is designed to service the urban area only.

9 The East Coast scheme detailed in Fig 1 stretches along 8km of coastline and comprises of 53.4km of mainly PVC piping, 25 pump stations and 1 treatment plant at Taipa with the final discharge into the Parapara catchment.

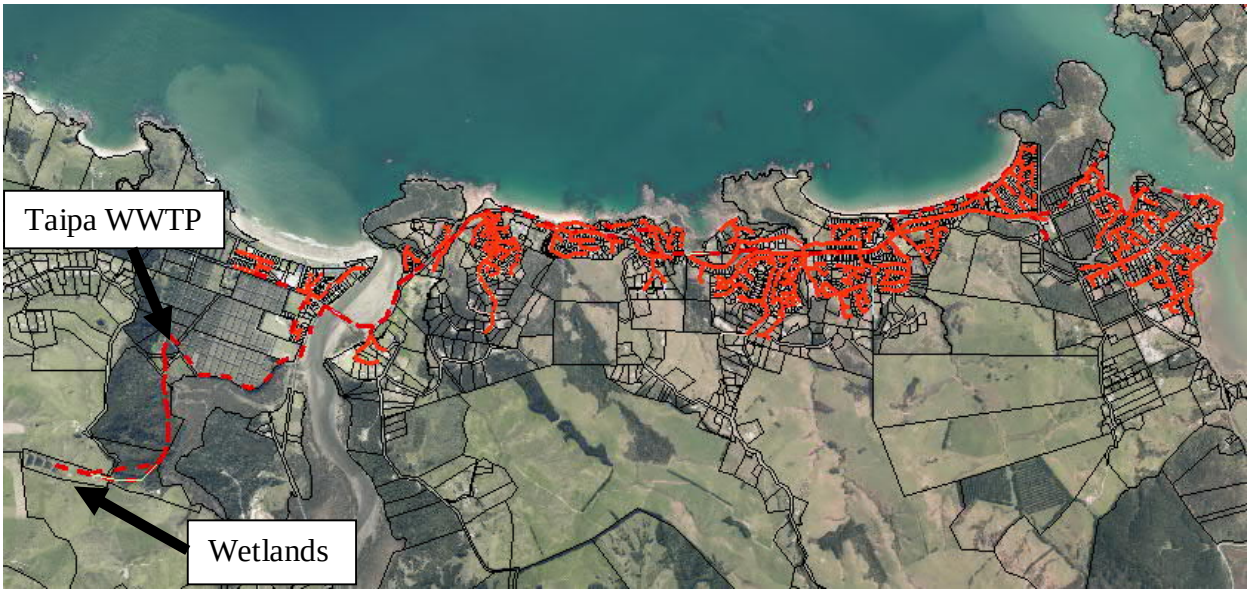

Fig 1 East Coast Wastewater Scheme

10 There are 1,417 properties connected and 513 properties paying for availability to connect. There are no plans to extend the scheme beyond its currently serviced area, however flows will continue as the unconnected properties progressively connect.

11 Being coastal holiday communities, the serviced population varies throughout the year. While there are permanent population projections available, these don't consider the peak summer, peak loadings. Based on the inflows to the treatment plant, the permanent population serviced is approximately 2,200 and the peak serviced population in in the order of 4,000 people. Peak summer flows have been monitored since 2010 showing an average 5% p.a. annual increase, whereas annual average flows show around a 2% increase p.a.

12 The average wastewater treatment plant inflows over a year are detailed in Fig 2. As detailed in Fig 2, the highest daily volume flows occur during the wetter months, whereas the high loading (more waste) flows occur in peak summer. The East Coast network is a gravity wastewater network and all gravity wastewater networks have a degree of stormwater inflow and infiltration. Faults in the network could be damaged pipes, both private and public, illegal down pipe connections, low gully traps or leaking joints in manholes. Typically, the larger the rainfall event the larger the volume of stormwater that finds its way into the wastewater network. The extent of stormwater entering the network can be measured as RDII (Rainfall induced Inflow and

Infiltration). This measures the percentage of rainfall that falls on a catchment that makes its way into the wastewater network. Within the East Coast network this has been calculated at between 0.5% and 0.7% of the rainfall that lands on the catchment and finds its way into the sewerage network. In comparison to other New Zealand communities the East Coast scheme is relatively water tight network. The higher flows during the wet months is a function of the network size, and low off-season population and not the leakiness of the network.

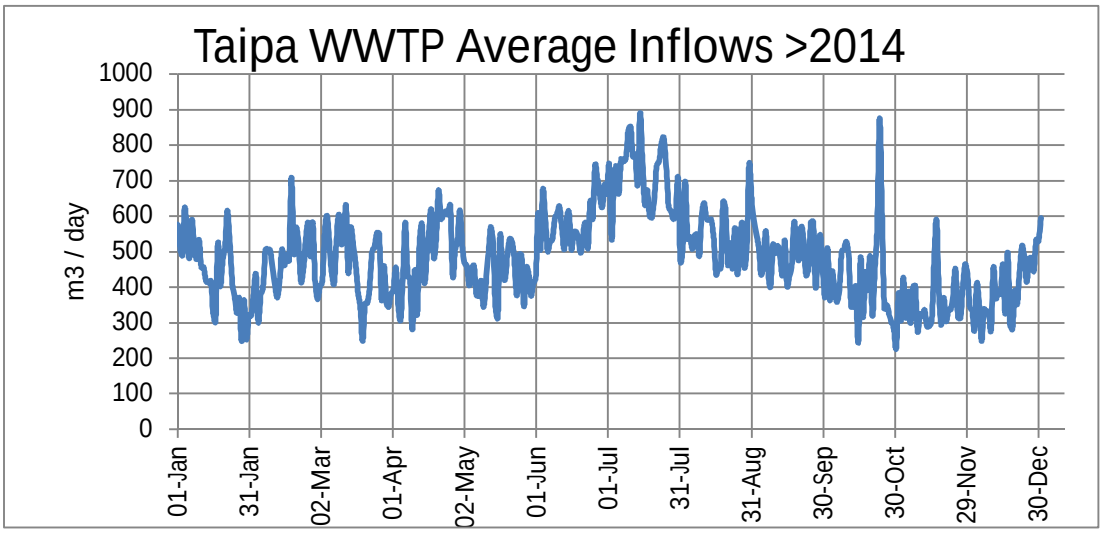

Fig 2 Annual Inflow Profile

13 The annual average flows from the wetlands are detailed in Fig 3. Due to the area of the ponds and wetland, the final discharge volume is heavily influenced by the annual rainfall volumes. Based on a typical year the average rainfall is equivalent to 175 $m^{3/}$day. Actual discharge is based on when the rainfall occurs and the volume of surface evaporation that occurs.

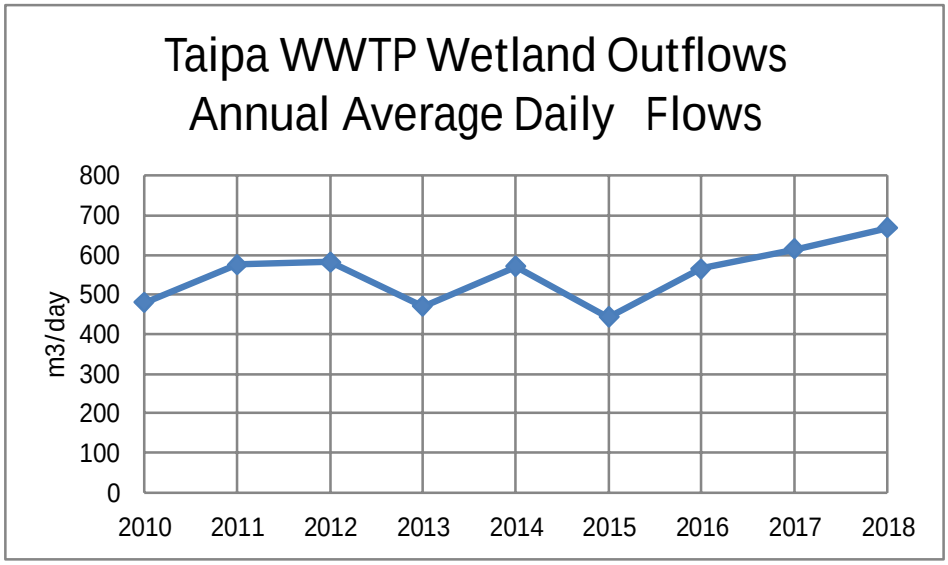

Fig 3 Annual Daily Average Discharge Volumes.

14 The existing wastewater treatment process consists of an initial screen to remove the larger insoluble items, i.e. plastics and rags, followed by 3 medium sized waste stabilisation ponds, followed by a large maturation pond. The flow is then pumped over a hill to a constructed wetland before discharging into a small drain which is a tributary of the Parapara River network. The Ponds wetland layout is shown in Fig 4.

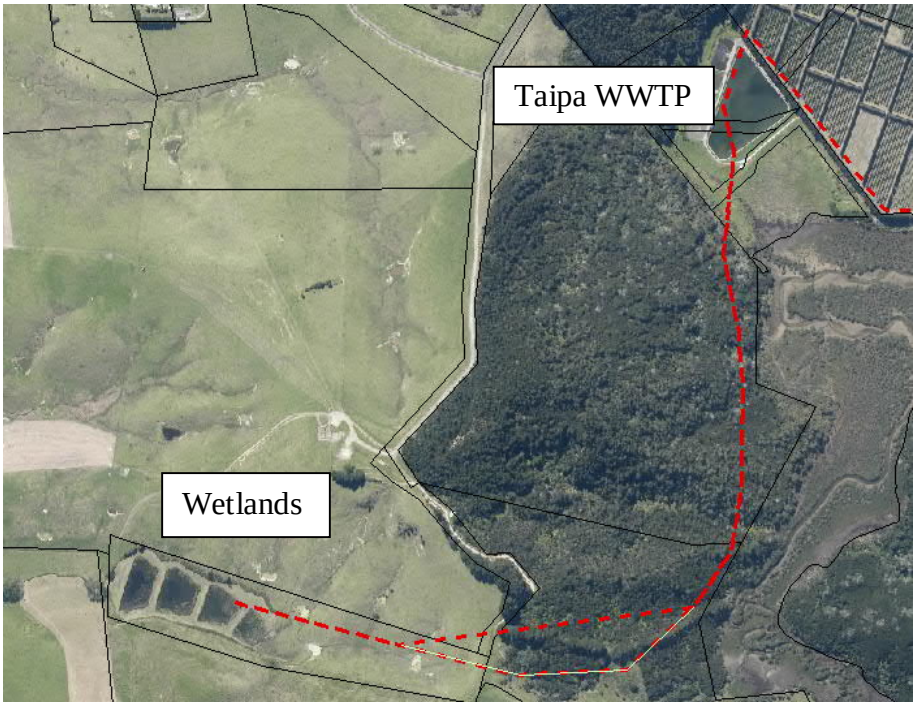

Fig 4 Ponds and Wetland Configuration.

The FNDC Long Term Plan 2018-2028

15 Council's 2018-2028 Long Term Plan contains the following strategic priorities:

- Community Outcomes
  - •Communities that are healthy, safe, connected and sustainable.
  - •A wisely managed and treasured environment that recognises the special role of tangata whenua as kaitiaki.
- Strategic Priorities
  - •Affordable core infrastructure.
  - •Address affordability.

16 The 2018-2028 LTP has an allocated sum of $672,000 to fund a treatment plant upgrade at Taipa. This is both a minimal and nominal amount. This value will be revised via public consultative process once there is more certainty around the upgrade options required to meet compliance with the new resource consent. As detailed in the Rates Affordability Section, funding of any upgrade works will have a significant impact on the ratepayers.

17 Council's Rating Structure is detailed in the Long Term Plan. With regards to wastewater rating the following applies:

- Only properties within the serviced area pay wastewater rates.
- Capital and renewal expenditure is ring-fenced to each scheme it applies to, i.e. East Coast properties fully fund any costs associated with upgrading the East Coast scheme.
- All new assets are depreciated via straight line depreciation over their theoretical lives. Typically, depreciation costs are significantly higher than loan repayment costs.
- The daily operational related expenditure is pooled district wide with everybody connected to wastewater across the District paying the same amount.

18 With regards to the impact of any new capital on the East Coast scheme, the actual amount will depend on the type of assets and asset lives proposed. As a rough

guidance, every $1 million of capital expenditure will result in around $35 p.a. being added to each East Coast ratepayer. I.e. $10 million around extra $350 p.a.

19 The current East Coast capital sewer rate is $241.84 per property, and Opex rate of $542.22 per property giving a total wastewater rate of $784.06 p.a. This is one of the lower wastewater rates in the Far North.

Rates affordability in the Far North District

20 Affordability is best defined as the ability of the community to fund services. There is a difference between affordability and willingness to pay.

21 Council has undertaken two recent benchmarking exercise that compare the 3 waters performance for 50 different Councils. This is led by WaterNZ. The benchmarking enables Council cost to be directly compared with other Councils. To undertake the benchmarking the individual FNDC wastewater schemes were compared as one (Fig 5). As shown in Fig 5, FNDC has the least affordable water and wastewater schemes; that is, the rates paid for these services takes the highest 4% of available household income. Some guidelines suggest the total rate take should not exceed 4% of the household income. Typically, the cost of water and wastewater is double the national average for similar sized Council. Any additional capital expenditure worsens this situation.

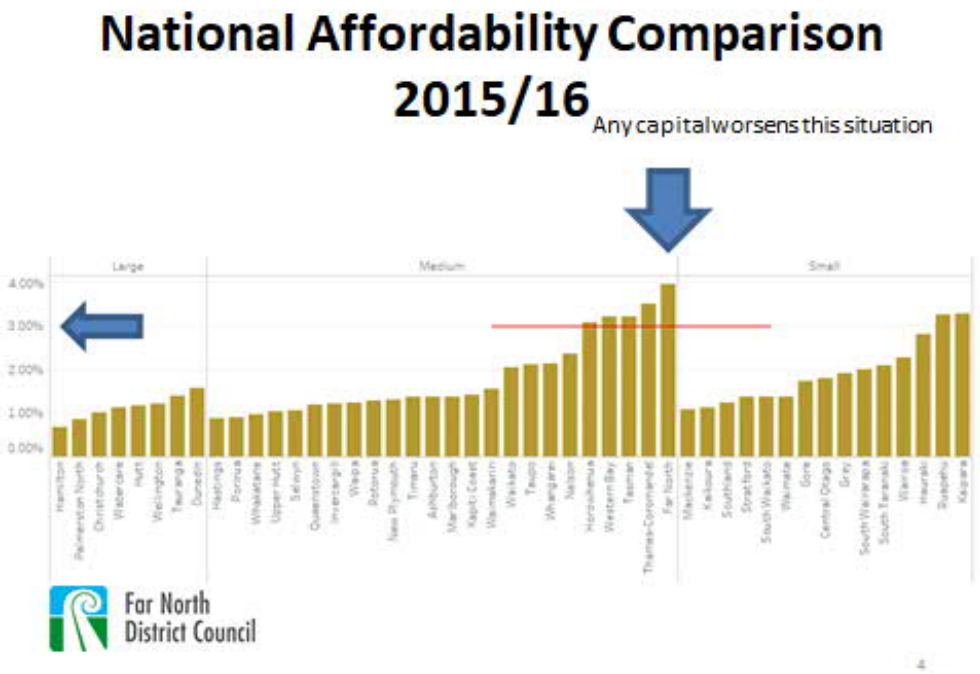

Fig 5 Relative affordability comparison.

22 The same benchmarking exercise was undertaken for the 2017/18 Financial year. This showed the National average wastewater rate for similar sized Councils was $497.49, whereas the average wastewater rate in the Far North was $973.49.

History of Consultation with Tangata Whenua

23 When the East Coast and treatment option was first proposed in 1988 Ngati Kahu applied to the Waitangi Tribunal to seek redress over issues with the proposed scheme. This is documented in WAI017. During the more recent consultation it became clear these historic concerns had not been addressed, and that most of the current issues are fundamentally the same as in 1988.

24 In 2008 FNDC, lodged an application to replace the resource consents for the Taipa WWTP. I understand that the consent application was publicly notified in July 2010. I also understand that after the close of the submission period FNDC requested that NRC place the application on hold to enable FNDC to investigate alternative treatment and disposal options.

25 Available records indicate that in 2010 FNDC staff engaged with local tangata whenua and FNDC arrived at a decision to pursue the option of discharging treated wastewater from an upgraded treatment plant to the Kerifresh citrus orchard which is located next to the WWTP. This option was discarded because Ngati Kahu (the land owner) could not confirm its support for the proposal, there were risk of the effects on a food crop, and being low lying, ground conditions would limit the discharge.

26 Available records show that in late 2014 NRC and FNDC wrote separately to submitters advising that the consent process would recommence in 2015 and invited submitters to contact FNDC

27 On 25 March 2015 a meeting was held at Parapara Marae between the representatives of Parapara, Taipa and Ko te Ahua marae. The meeting was attended by senior FNDC staff and His Worship the Mayor, Mayor Carter. His Worship the Mayor advised that a working party would be set up between FNDC staff and marae representatives to develop a long-term strategy to address tangata whenua concerns associated with the WWTP discharge.

28 During 2015 – 2017 FNDC staff met with marae representatives on a number of occasions. A Terms of Reference (attached) were developed and agreed upon in early 2016. Significant work was undertaken to reach that point. The terms of reference sets out the principles by which FNDC and marae representatives could work together and the short, medium and long term goals that would be worked towards. The ultimate goal of the marae is to stop the discharge of wastewater into their awa. This goal was recognised as a long-term outcome and not something that could be achieved as part of the replacement of the current consent.

29 Over 2016 meetings were held at Parapara marae on 3 March, 9 June, 3 November and 15 December 2016. There was an inability to reach common grounds to enable a full options investigation to progress.

30 The Marae Committee rely on Andreas Kurmann, a local environmental scientist for technical support. Mr Kurmann is a strong supporter of electrocoagulation. While

electrocoagulation is in use internationally, there are no operational electrocoagulation plants in use in municipal wastewater plants New Zealand, hence there is a degree of unknown around their effectiveness and operational cost. There was a strong push by the Marae Committee to further evaluate electrocoagulation as an option. Electrocoagulation has not been eliminated as one of the treatment options that could be used, and once the final treatment qualities are know, it will be considered along with the other likely treatment options.

31 In mid-2015 it was agreed that Consultants would be engaged to consider what treatment options were available. This was to be a detailed options report, that did not provide a final recommendation, but would enable the Marae Committee to evaluate the pros and cons of various options. Unfortunately, it was not until early 2018 when Council was able to agree that AECOM would undertake an optioneering analysis. (scope attached)

32 On 22 February 2018, FNDC staff, AECOM staff and marae representatives met for whakawhanaungatanga purposes before AECOM started the options analysis. Before the first workshop AECOM provided a desktop feasibly study of the options for upgrading the WWTP. This included very high level, very conservative desktop analysis of land suitable for discharge within Taipa. What was not done was the converse evaluation showing available land with minimal constraints. The process did prove, that with even with high constraints suitable land for land disposal was technically feasible.

33 On 19 April 2018, FNDC staff, AECOM staff and marae representatives met for the first optioneering workshop. At this meeting, Council was presented with The Mission Statement (attached). The Mission statement has very restrictive discharge volume and quality parameters. It is also contrary to the Terms of Reference.

34 It became clear from this workshop that discharge of treated wastewater to water ways, regardless of its quality or the type of treatment it received is unacceptable to tangata whenua. The Marae representatives' preference was to utilise a very high standard of treatment before discharge to land occurred, i.e. MBR followed by land disposal.

35 Of the 14 options for upgrade presented by AECOM four were discarded by the marae representatives because they were not able, unlikely or would have little effect on reducing the contaminant levels of wastewater to meet the high effluent standard being sought by the HIR. Some of the options that will be carried over will need further treatment provisions to allow for increased phosphorus reduction.

36 The second and final workshop was held 31 May 2018. There was little progress toward a preferred option at this workshop. Again, the Mission Statement's parameters were detrimental to making progress. Tangata whenua expressed that they would not arrive at a preferred option, or options without visiting working examples of the remaining options. Staff asked tangata whenua to explain the value in this exercise and to rethink the parameters of the Mission Statement, however no explanation was forthcoming.

37 To design and implement a treatment and discharge system that would meet the parameters of the Mission Statement would cost approximately $20 million resulting in an increase of $772 per property per year, with a total wastewater rate of approximately $1,550 per property per year.

38 In an effort to move the process forward and for educational purposes, tangata whenua were invited to FNDC's Kaikohe Office to attend a workshop with AECOM and other interested parties on the principles of the discharge of wastewater to land on the 23 August 2018

39 The workshops failed to provide a preferred direction for wastewater treatment at Taipa. Since then there has been minimal progress on determining a viable solution. While FNDC are happy to continue to investigate discharge to land it needs to be recognised that the parameters of the Mission Statement are too restrictive to allow for a) meaningful consultation with iwi and b) success in finding land and implementation of discharge to land.

40 To conclude, at the current time the existing treatment plant is providing adequate treatment across many parameters but is deficient in others. Through the marae consultation process, the expectations of the Tangata Whenua for the discharge to

the Parapara to cease have been clearly articulated. As yet Council has not consulted options and costs with the wider East Coast community, and as yet Council has not addressed the affordability issues associated with potential costs to upgrade the East Coast scheme, or in general the affordability of wastewater schemes in Northland.

I would like to thank the committee for their time on this matter.

Barry Somers
Assets Manager – 3 Waters, Far North District Council

Attachments

Terms Of Reference

Parapara and Taipa Catchment Working Party

Terms of Reference

1. Background

1.1. Ngati Kahu

In 1988 the Waitangi Tribunal reported on its findings of Claim number Wai-17[1]. The claim was put forward by Ngati Kahu and related to the Taipa wastewater treatment plant, and in particular the siting of the plant on the Adamson-Ngati Kahu farm and the discharge of treated wastewater into the Parapara catchment. Although the outcome of the Tribunal hearing did not grant the claim being sought by Ngati Kahu, the report itself is very important because it sets down a detailed account of the significance of the Parapara area to Ngati Kahu; and the grievance suffered by tangata whenua with the implementation of the Taipa sewerage scheme. With that in mind, it is important to consider the records contained in the Waitangi Tribunal report to gain an understanding of the context behind the Kaupapa outlined in these terms of reference.

1.2. The current situation

Permission in the form of resource consent is required from the Northland Regional Council to allow for the wastewater to be discharged into the receiving environment. The resource consent for the Taipa wastewater treatment plant expired in 2008 and an application for replacement resource consent was lodged with the Regional Council before it expired. The resource consent application was notified in 2010 to allow for public submissions on the proposal. A great deal of submissions were lodged in opposition to the consent application and FNDC staff requested that the application be placed on hold to try and resolve some of the concerns that were raised. In late 2014 and early 2015, FNDC staff started contacting submitters and affected parties in a bid to re-commence the consent process. A meeting was eventually held at Parapara Marae on 27 March 2015 between FNDC and representatives of affected Marae. At that meeting it was agreed that a working party would be formed comprising representatives of affected marae and FNDC staff in order to work through the issues together.

[1] Report of the Waitangi Tribunal on the Ngati Kahu - Mangonui Sewerage Claim (Wai-17). - Wellington, N.Z.

2. Term of Reference

These Terms of Reference set out the overall scope, aims and purpose of the Parapara and Taipa Catchment Working Party.

2.1. Vision

The overall vision of the marae comprising the working party is to see the mauri of the local waterways restored, especially that of the Parapara Awa.

2.2. Purpose and Scope

The discharge of treated wastewater into the Parapara catchment affects the mauri of the Awa and is inconsistent with the cultural values of tangata whenua. The purpose of the working party is to work collaboratively to identify culturally acceptable treatment and/or disposal and monitoring options that may be implemented and look at resolving from a short, medium and long-term plan, given the many and varied complexities associated with this matter.

Specific functions of the working party are as follows:

1. To provide a forum for marae and FNDC to develop a mutual understanding of specific issues and constraints associated with the Taipa wastewater treatment plant.

2. To facilitate the sharing, development and gathering of information for the purpose of advancing progress with the resource consent process for the wastewater treatment plant and developing options for addressing the affects of the wastewater discharge on Maori cultural values.

3. To establish short, medium and long-term goals and/or options for addressing the effects of the Taipa wastewater treatment discharge on Maori cultural values.

4. To work together acknowledging Council's duty to ratepayers to provide affordable infrastructure and to achieve the outcomes as set out by Item 3 above.

5. The working party will initially convene meetings on a monthly basis to carry out the above functions.

2.3. Goals

Achieving the vision of the working party will be a long-term process, and it will not be achieved by only addressing the discharge of wastewater into the catchment. The goals provide stepping stones for achieving the working group's vision. These goals will be reviewed and, if necessary, revised on a regular bases to ensure they are appropriate. This is important for the medium and long-term goals, which rely on the outcome of the short-term goals.

Short Term: Achieved before December 2016 (1 year)

1. Establish the involvement of key players or stakeholders, including the District Health Board, Northland Regional Council, elected representatives and community groups
2. Develop agreed ways of measuring the health of the Awa and start a long-term monitoring programme.
3. Investigate short-term options to improve the treatment quality and or disposal of the wastewater.
4. Build the capacity of the working party to enable its marae to participate and influence the development of key policies and planning documents that affect the sewerage scheme (for example district and regional plans, financial planning documents such as the Long Term Plan, and central government regulations such national policy statements).
5. Lodge a short term (five years) resource consent that incorporates conditions that reflect the outcomes of the above goals and is consistent with the requirements of the Local Government Act 2002 (i.e. it needs to be affordable).

Medium Term: Achieved before October 2022 (5 years)

1. Establish key priority for achieving the vision of the catchment group drawing on the monitoring completed to date and any other relevant work (including cultural impact assessments).
2. Develop a strategy for implementing the priorities identified above.
3. Prepare and lodge a medium-term resource consent application (10 years) for the Taipa wastewater treatment plant with conditions (including upgrades to improve treatment quality or the disposal process) that reflect the priorities and long-term strategy of the catchment group.

Long Term: Completed by 2025 (15 years)

1. Achieve clear and measurable improvements to the water quality of the Parapara Awa and associated waterways by progressively implementing the catchment strategy. It is acknowledged that one of the objectives of the working party is to stop the wastewater discharge into nearby waterways. This goal does not exclude that option and he work undertaken to achieve this goal will include assessing all options to stop the wastewater discharge into the nearby waterways. However, important to ensure this long-term goal is broad enough to achieve the ultimate vision of the working party, which is to return the mauri back to the Parapara Awa.

2.4. Responsibilities

This section identifies the responsibilities of each party (marae and FNDC) under these terms of reference. Meeting these responsibilities is key to ensuring a productive and positive process is carried out by all parties. In addition to the below broad responsibilities, a series specific tasks are identified in Appendix 1.

FNDC responsibilities

- FNDC staff to liaise with elected members to keep them updated to ensure they are fully aware of the work being completed. Any feedback from elected members will be reported back to the working party.
- FNDC commits to working with marae representatives to achieve the required outcomes, this includes building capacity of, and providing support to, the hapu to ensure all parties are able to fully engage with the working party process.

Hapu responsibilities

- Marae representatives on the working party will liaise with respective marae and report any feedback from the marae back to the working party on a regular basis.
- Marae representatives to provide cultural knowledge and capabilities to support the working party.

Together we will be responsible for:

Regularly reviewing the goals to ensure they are relevant and appropriate. No decision on the goals is to be made without both parties agreeing.

2.5. Meetings

Attendance

Meetings will include representatives of Parapara Marae, Taipa Marae and Ko Te Ahua. Marae and FNDC. Current representatives are

Trudy Allen	Taipa Marae
John Basset	Parapara Marae
Tina-Lee Yates	Parapara Marae
Robin	Ko Te Ahua Marae
Nina Gobie	Ko Te Ahua Marae
Ruben Wylie	FNDC
Barry Somers	FNDC

Resourcing

FNDC will resource each working party meeting in terms of venue hire, catering and travel.

Location

Meetings will be held at Parapara Marae, unless otherwise agreed by the marae representatives.

Frequency

Meetings will be held on a two-monthly basis unless otherwise agreed by the marae representatives.

2.6. Review

These terms of reference will be reviewed annually in November each year to ensure they adequately consider new developments arising as a result of to work on the goals and any legislative or policy changes that affect the working group. Changes will be tracked via the below document history table.

Document History and Version Control Table		
Version	**Action**	**Action Date**
1.00	Creation of original document	TBC

Appendix 1: Key Tasks

This section provides an outline of initial tasks to be completed by the working party. This should be treated as a guide because additional tasks will be developed as the project evolves and an overall work strategy is developed.

1. FNDC will engage, with the approval of the rest of the working party, an independent cultural liaison person to attend meetings and workshops from time to time. This person's role will be to break down technical information in the context of tikanga and kaupapa Maori.

2. An independent engineering firm will be commissioned that is experienced in wastewater treatment, design and disposal. The firm is to prepare an issues and options report for the Taipa wastewater treatment and disposal system. The work will consider the views and ideas of those parties comprising the working party. This work will be solely for the purpose of gathering and documenting information and will assist the working party in decision on short and mid-term treatment and disposal options.

3. Once there is wider agreement on the likely options, FNDC will commission affected marae to complete a cultural impact assessment either separately or collectively. The purpose of the cultural impact assessment will be to identify the effects of the current wastewater disposal activity, considering any agreed upgrade options.

MISSION STATEMENT

FROM NGATI KAHU HAPU, NGATI TARA, NGATI WHATA & MATAKAIRIRI & DOUBTLESS BAY COMMUNITY MEMBERS LIVING IN THE CATCHMENT AREA OF TAIPA, PARAPARA & AURERE

Named: TE MANA O TE WAI HAPU INTEGRATION ROOPU (HIR)

Tihei mauri ora, the 3 Hapū of Ngāti Kahu – Ngāti Tara, Ngāti Whata and Matakairiri as Kaikaitiaki in our rohe are fulfilling our responsibility to mitigate and protect our waterways from the adverse effects of the discharge overflow of the Taipā Wastewater Plant into the Parapara awa and Aurere moana.

We are making the statement that the mauri of our awa and moana is suffering from the adverse effects from the Taipa Wastewater Plant due to poor maintenance and nil upgrade of the plant and compliance standards that have not addressed population and development growth in our rohe.

For our 3 hapu the health of our awa and moana has for mai rānō been an intricate part of our tikanga (way of life).
We know all waterways in our rohe are the life force that has allowed our whanau to remain on our tribal lands for generations.

Historically the Parapara awa flourished with a variety of tuna, Aurere was plentiful providing a wide variety of kai moana and shellfish. This legacy, our tupuna handed down through tikanga practices from collection and spiritual respect to rejuvenation methodologies that kept our

waterway's healthy.

We need the mauri of our awa and moana returned to its natural state.

RE: Taipa Wastewater Treatment System Resource Consent 4007 Renewal. Overdue since 2008

This is a Statement that we; TE MANA O TE WAI HAPU INTEGRATION ROOPU (HIR) will be accepting, a renewal of the Consent 4007 conditional on, and only if, the following discharge parameters of the upgraded Waste water treatment plant can be met, as per the National Policy Statement for Fresh Water Management 2014 (amended 2017) Ministry for the Environment.

We have an obligation to protect our Environment and stop the pollution of our water ways. A point source discharge of Waste water is an ideal example for implementing very tight parameters to stop future pollution and reduction of marine life.

TO THE FAR NORTH DISTRICT COUNCIL,

To carry out the following activities associated with the operation and use of a sewage treatment and disposal system at Ryder and Parapara Roads, Taipa on, Pt Allot 57, Pt Sec 33, & Pt Allot 24, Blk IV Mangonui SD:

01

To discharge treated municipal wastewater to land after the following discharge parameters are met.

a) Zero discharge over the property of IJ & GM Muir Trust, Parapara Road, as is the current situation.

b) Zero discharge into Parapara Stream, or any stream in our rohe.

02

To discharge contaminants to air from activities associated with the treatment and disposal of wastewater at two points, at or about Map References O04:514-882 & O04:524-889;
subject to the following conditions:

DISCHARGE TO FARM LAND

1 The quantity of treated wastewater discharged shall not exceed 350 cubic metres per day (based on dry weather flows).

2 The discharge shall not cause the soil quality in the unnamed designated area, to fall below the following standards:

a) The natural pH of the soil shall be within the range 6.0 to 6.5

b) The median concentration of the faecal coliform bacteria in the water shall not exceed 100 per 100 millilitres, and the 80-percentile concentration shall not exceed 350 per 100 millilitres, based on not fewer than 5 samples taken over any 30-day period.

c) The dissolved oxygen concentration shall not be reduced below 90% of saturation.

d) The concentration of total N in the discharged treated water shall not exceed the following:

at pH 6.5; 20°C; 1.0 mg/l total Nitrogen

e) The concentration of total P in the discharged treated water shall not exceed 0.25 ppm

SCHEDULE 1

The Consent Holder or its agent shall carry out the following monitoring programme.

1. MONITORING OF THE DISCHARGE

At not less than weekly intervals the Consent Holder or its agent shall undertake the following sampling and analyses.

Composite samples of the discharge made up of not less than three consecutive grab samples of equal volume taken at least 5 minutes apart and be analysed for the following:

Determinand
pH
Total Phosphorus
Total Ammonia
Total Nitrite
Total Nitrate
Total Nitrogen
Biochemical Oxygen Demand BOD 5 or DOD 5
Suspended Solids

Determinand
Total Coliforms (membrane filtration technique)
E. coli

2.0 REVIEW

This monitoring programme may be reviewed two years after the commencement of the consent, where a need arises. The Northland Regional Council in conjunction with the Consent Holder shall undertake the review. The Consent Holder shall meet the

reasonable costs of any such review.