Te Awarua-o-Porirua Whaitua Committee Meeting 1.12.16

5-9 pm at MANA CRUISING CLUB

Summary

Contents

Attendees

Te Awarua-o-Porirua Whaitua Committee:
Dale, Diane, David, Jennie, John G, John M, Naomi, Sharli-Jo, Stu (Chair), Barbara, Larissa, Richard
Apologies: Warrick

Project Team:
Alastair (Project Manager), Brent, Hayley, Jonathan, Keith, Murray, Sheryl, Kara, Suze, Grace, and Tim Strang from Wellington Water

Presenters:
Amanda Cox, GWRC, Ton Snelder, Land Water People, Steve Hutchison, Wellington Water, Christine Jacobsen, PCC

Members of the Public: Glen Lauder, Phillip Barker, Cr Jenny Brash, Cr Peter Gilberd

Meeting purposes

The purposes of this meeting were:

1. Build understanding of the scenario-building aspect of the whaitua process, and where we are going
2. Understand content of scenarios material produced so far & consider fitness for purpose
3. Understand Wellington Water's Porirua Master Plan, and feel comfortable that implications are being accounted for
4. Build understanding of the essentials of FMUs
5. Feel comfortable with the FMU methodology and process
6. Learn about impacts of rainstorms on rural land, and consider implications
7. To hear about and understand potential alignment between whaitua work and Councils' parks and open spaces / reserves work

Meeting notes

After the karakia, Stu Farrant welcomed the Committee and the manuhiri, including members of the public, and ran through the agenda.
Stu welcomed the Committee's new member representing Porirua City Council, Councillor Dale Williams (Northern Ward).
Notes of the meeting follow; please refer to the whaitua webpage for presentation content.

Bonus Session – Recent events - Diane's photos

Diane spoke to photos taken around her property after the recent earthquake and storm rains, and there was discussion afterwards. Please refer to the photos. Key points from discussion and presentation follow.

Damage significant	• Combination of continued rain followed by earthquake followed by heavy rain event may have contributed to magnitude and nature of damage. • Lots of debris on Moonshine Road. • On Diane's property there may have been shift in subterranean waterways.
In unexpected areas	• Some damage in places which would not have predicted, some places expecting damage showed no erosion. • E.g. Kakaho stream where a lot of pole and riparian planting but major damage. • Diane had 6 slips that have damaged fencing in unexpected locations.
Implications	• Hard to predict how land will react to natural hazards and events– management options change the odds of earthquakes / storms affecting areas but many other variables in play - no guarantees. • Emphasised that while the Committee can make decisions based on the best information at the time, there will always be unexpected events and situations. • RI Working Group is considering the implications of this when looking at management options.

Session 2 – Scenarios: understanding process & parts

Alastair Smaill, Murray McLea, Hayley Vujcich - all GWRC

This session was about deepening Committee understanding of scenarios and the process, and about getting familiar with the scenario material that's been developed so far.

Understanding scenarios & process

Alastair opened the session with a talk about scenarios (no presentation slides) and led subsequent discussion. Key points from the discussion are below.

Where we're at	• For several months, working groups have been working on management options in rural sector, urban development and SW/WW. Lots of technical inputs have come from WWL and GW staff • Over next few months, have to develop these further to land on scenarios to test through modelling. • Some anxiety and uncertainty has been expressed by WG members on what will happen with scenarios and what we do with modelling outputs.
Building	• The purpose of scenarios is not to make policy decisions but to maximise

scenarios: informing our choices	amount of information we have to inform our decisions. • Think of our Whaitua Implementation Programme (WIP) package of policy and management options as a Christmas cake. • We will make several cakes (by modelling) with different recipes to try – and make our judgment call. • The final recipe for Christmas Day – the WIP package of management options and policy approaches – will be a combination of people's favourite recipes. • We are trying the different recipes so when we're making our decisions about which recipe will be the final Christmas Day cake, we are as well-informed as possible.
Ingredients: all must be tested	• Through the working groups we already know many of the core ingredients. Modellers will give some technical advice on the potential impacts of different ingredients (early 2017). • Need everyone's inputs and ideas, but cannot take things on faith. For example, instinctively we might feel an ingredient (e.g. riparian planting) is a must-have in any cake because it seems useful and effective. • But we'll still need to look at the evidence from the "baking" (scenario modelling) tests – is instinct borne out by evidence? • There may also be different ways to use the same ingredient, and strong feeling that these differences are important. We need to assess on the evidence whether these are actually significant.
Non-"baked" but important components	• There may also be options which can't be modelled but will still be important to make recommendations – we might think that the cake must have holly on it, but you wouldn't put that in the recipe and bake it. Example: fish passage • Instead, outside of modelling system we would still do analysis on its impact, to consider including as part of the final package.
IDing recipes to try: one 'crazy' cake required	• There may be some discomfort around what the final cake recipe will be. • The point of testing different cakes is to find a recipe that most people are happy with. • It's important to bake and try one cake that's a bit extreme, to verify that it will actually be unfavourable (and there might be elements that could improve other cakes). • E.g. some investments may be very expensive to implement but have very small gains in water quality. • There were questions about rumours of the Ruamāhanga gold scenario including really extreme management options (e.g. redirecting the river into Lake Wairarapa / draining Lake Wairarapa to create a wetland). There were concerns that extreme scenarios would discredit the Whaitua Committee or GWRC. • Alastair noted that the options being suggested in Ruamāhanga should be reasonable & plausible in Ruamāhanga, and they have been discussed through community engagement but some will still cause discomfort. This is appropriate otherwise there won't be a wide enough range of information to inform decisions.
What criteria for discarding challenging management options?	• There were questions about who would be voice of reason around what is plausible (yet sufficiently challenging) in management options, and at what point extreme options would be dropped. • Some people observed that some options will fit in well with some community values but be in conflict with others. Committee needs to have reasoned discussion as to why a certain path was pursued, and be as

transparent as possible.

- Alastair answered that there is a lot of expertise available to the process.
- Some options may be plausible and practical physically but economically prohibitive.
- The scenario modelling outputs will provide information illustrating the impact of extreme interventions, and BAU will show impact of not making any changes. And modelling results will speak for themselves

Role of cost

- There were concerns that cost would drive the final decisions about what management options to use.
- The response was that Committee also need to consider:
    - capital cost now vs opportunity costs for that money
    - environmental and economic costs in the long term
    - where costs are borne in short and long terms and whether this is equitable.
- Alastair noted that time will be an important variable in modelling, and Committee consideration needs to be intergenerational e.g. 2080 and beyond - to measure long term impact.
- A management option's cost (with a given policy approach implementing it) may be huge if the implementation is to all be done in 10 years, vs bearable if spread over 80.

Some time to settle on recipe

- Modellers will build models in first 3-4 months of 2017 so we have some time to finalise scenarios. There will likely be dialogue with modellers early in 2017.
- There was a question on whether the modelling will be iterative, to fine tune scenarios.
- To some extent yes, but is limited by time it takes to run through models but some tools will be used to do a "quick and dirty" estimate of a possible tweak's impact before running through whole model.
- Also need to evaluate who pays for different options and what the social impacts are.

Transparency, uncertainty

- There was a question about how much certainty / uncertainty will be acceptable, and how Committee can understand this (as they must).
- Alastair explained - the modelling results will indicate the direction of change (improving / deteriorating attributes) with reasonable certainty but that is generally all.
- There were questions about how to identify the influence of different factors in different scenarios, and noting that different scenario may produce similar outcomes.
- The modellers are factoring this into the design of modelling architecture.

Te Awarua-o-Porirua Whaitua Scenario material so far

Rural Issues

Murray McLea (GWRC) presented the scenario material from the Rural issues working group. Please refer to the whaitua webpage for details. Key points from the Q&A discussion are below.

Management options & significance

- Main things can differ between scenarios: retirement/afforestation – gold scenario would be to retire land most susceptible to erosion; etc.
- Management options for RI include stock density, retirement, maximum harvest areas for forestry, at different levels for different scenarios.

- There was a question about whether stock effluent (from stockyards, shearing sheds etc.) is an issue in the catchment. .
- There are none known, and there's no dairying in the catchment.
- Septic tanks are an ongoing issue.
- The project team are current talking to modellers about on site waste water management options and what impacts might be based on different land use changes e.g. Subdivision, including stock and domestic water use.
- Clarification was requested about whether slope of land correlates with farming potential, and therefore implies best to retire steepest land as lowest potential for farming and highest for erosion?
- Generally the steeper the land, the more erosion prone it is and the lower the density of farming.

Retirement, space planting

- Some members asked about the differences between these options, and how retirement would work on private land. There was also a question about whether costs would incorporate carbon sequestration under the ETS
- Murray explained that retirement means instead of using land for farmland, revegetate (it is no longer farmed, but fully revegetated).
- Encourage private landowners through district plan changes, incentive programs, there are a number of ways this can be done and apportion the cost burden, but these are not very important at this stage as long as we know whether it is possible.
- Testing of the impacts will be done at the scenario testing stage.
- Maps are available to indicate areas of land use classes.

Defining options & combinations

- Options are defined in scenarios by presence/absence (e.g. stock exclusion / no stock exclusion) or intensity (e.g. stream width for riparian planting) and then a spatial variable (where it's applied) - e.g. applied to all streams / applied to all streams on public land etc.
- Another option is to define as a percentage of streams (e.g. 50%)
- Other options include (e.g.) stock limits, sediment devices (ways of getting sediment out of the water)

- Committee requested a summary in each column with which values each option addresses and some information on would be useful to clarify what issues each management option is trying to address. .
- Murray said that this will be part of the working group's next phase of thinking

Stormwater & Wastewater

Hayley Vujcich (GWRC) presented the scenario material from the Stormwater & Wastewater and Urban Development working groups.
Please refer to the handout "Stormwater and wastewater management options 01.12.2016" on the whaitua webpage for details. Key points from the discussion are below.

Progress update

- Some work has been done on relating management options to impact on attributes identified by committee with project team and Wellington Water (WWL) staff.
- E.g. Some options were not pursued either because of obviously minimal gains, or had impact at too fine a scale to model.
- Both SW/WW and UD have been exploring management options with technical advice from WWL.

- Currently many options on the table but the working groups are challenged by how to put these together into scenarios.
- For UD, have identified names of the "cakes", but not ingredients, and vice versa for SW/WW.
- There is a significant challenge with determining appropriate scale of options for modelling.

Management options – discussion

- Please refer to SW&WW management options table on the whaitua webpage for details.
- Matrix tables to test options against values are available on the Shared Workspace

- In Porirua, the stormwater network is already at capacity during wet weather.
- Could transition to increasing capacity to anticipate growth and increased storm water volume.
- Rain gardens, stormwater treatment wetlands (catchment based) systems will have sediment and toxicant and nutrient retention capacity and biodiversity, temperature benefits.
- These are relatively expensive and technically challenging i.e. need to make sure hydrology matches garden/wetland capacity. Also would only be able to model impact on hydrology of rainwater retention at really low densities such as rural residential.

- Ceramic brakes – good example of one idea which would require government response. –Regional councils and regional plans have no control over this but can make recommendation to NZTA and central government on national legislation. If the committee want to model the impacts replacing all brakes with ceramic brake pads on toxicants, it can be discussed further with the modelling team to see whether it is possible and worthwhile to model.
- Road sweeping - this can be proposed to city councils as a suggested policy, but need to look at infrastructure, equipment and logistics
- Network upgrades - renewing pipes ahead of lifespan - look at potential gains of upgrading earlier in reducing overflows and contamination.
- Infiltration and inflow reduction could be on public or private network ~50/50% contribution.
- Members observed lots of opportunities for awareness-raising and education etc. before we get to management options – but a collaborative approach by many agencies will be needed
- There was a question about managing first flush runoff – is there a case study? Advice from WWL would be needed as to where it could work – close to infrastructure etc.

Urban Development

Please refer to "Narratives for Urban Development scenarios 01.12.2016" on the whaitua webpage. Hayley presented on the UD working group's material and led discussion. Key points from discussion follow.

Progress overview

- UD narrative scenarios – names have been chosen for six cakes.
- Scenarios 3-4 address upgrading stormwater management
- Scenarios 5-6 look at reducing or increasing urban footprint.

Management

- There was a question about where the impact of earthworks is

options - discussion	incorporated, interested in knowing what is the actual practice and what is the current impact? How adequate are current rules? What does best practice mean? There were similar questions around rural roads and their contribution to water quality via erosion in storms (such as Paremata Road in the recent storms). • Hayley replied that these haven't been explicitly addressed by WG yet, but will be discussed. They may need input from modellers on how these should be addressed.
Consistency and combining	• There were observations that management options were being used in different domains such as riparian planting. Is there a need for a consistent measurement unit – does it need to be the same across all the models? • Others observed the shifting interface between "rural" and "urban" land uses, and the need to spatially combine and visualise overall the implementation of different options (e.g. the percentage of new tree cover) across the whole catchment.
Modelling transparency and sustainability	• There was an observation that the catchment segmentation (FMUs) would help because they bring real world into the model. • It isn't the modelling that is important – it is more that if the modelling was open and transparent it could inform future decisions, and it currently feels like a black box. • Alastair noted that GWRC is actually paying for the model as a capital asset – so it won't be shelved and then reinvented ten years later. Instead paying for stuff upfront that we can keep on using. • Yes the modelling needs to be able to incorporate the influence of new technologies etc. into the future as well as be re-useable
Stakeholder work	• Both UD and SW/WW groups have been developing potential workshop sessions with developers and TAs for next year • Aim is to introduce stakeholder to the scenarios and to be generative around ideas for managing urban land uses/assets • Jon is developing run sheet for engagement early next year

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Session 3 –Porirua Master Plan Update

Steve Hutchison, Wellington Water Limited
See presentation on Te Awarua-o-Porirua Whaitua Committee webpage

Steve spoke to his presentation, followed by extended discussion and Q&A from Committee. Key points from the discussion are below.

Essential facts: pressures & state of waste-water system	• On an average day 22million L of wastewater, can do 950L/s during wet weather. • Population: Up to 30% growth expected up to 2051. • Note: infill growth tends to be easier to manage from SW/WW infrastructure perspective. • Described the system for identifying weak links in the system • 4-10x overflows per annum at different points (Duck Creek 4x p.a.; CBD 10-12x p.a.) • Example of recent rain water event – produced 10 hours of overflow – which went in to the Porirua Stream • Assessing inflow and infiltration extent • Laterals (public-private connections). Laterals explanation: from gully trap to sewer in domestic homes. These private (illegal) cross connections can account for high % of I & I but high cost to property owners to fix and difficult and costly to test at $2.5k per property. • Cost spread across time via rates – because demanded by community
Future	• Future level of service - extended monitoring plans. Monitoring plans providing data on storm weather event impacts etc. • There were questions from Committee around new developments: is it possible to specify / require future-proofed infrastructure? What's the life span of the infrastructure in new developments? • Steve said that new pipes (usually PVC) have an 80 – 100 year life span
Wastewater & consents	• Committee members noted no time to consent storm discharge (overflow in city centre pump station). • PCC (via contractor WWL) has consent to operate treatment plant, expiring in 2020 – What's the plan? What if consent was not granted? • Steve explained that currently storm overflows are non-compliant so if consent not granted, can be prosecuted/fined. Fines will be paid for by rates payers • It's important to come up with constructive outcome to look at options for improving. e.g. Storage could mitigate overflows (if enormous holding tank infrastructure could be afforded 7 built)
Impacts of discharges	• One question from Committee asked where is the information on cumulative impact on human health? New contaminants are a thing – what about pharmaceuticals? • Expert evidence on human health impacts is gathered for consenting process and information is held with different agencies e.g. GW and District Health Board. • There's no sign of pharmaceutical issues, especially given system that provides for single use of water before treatment. • A member noted that Committee need to think about the cumulative effects of low-level discharges e.g. heavy metals – and be well-informed. • There was an action for the Project Team to circulate to Committee a piece of GWRC work with information on shellfish and bioaccumulation
Focuses?	• A member asked what are Steve's top three issues for Committee to consider for modelling or management options? • Steve's top 3 were • Faecal coliforms and viruses in overflows in dry and wet weather. • Identifying the time period for making improvements on number of

overflows
- What areas are most sensitive to overflows.

Collaboration

- There was a question about the inputs into WWL's projections, and another on whether the Master Plan has been internally developed inside WWL or whether other agencies had been involved?
- Steve answered that the main Plan inputs are hydrological modelling, which has come together only in the last few weeks. There has been relatively little involvement from other agencies as this is largely a technical exercise, although worked with complaints line for PCC
- Keith from PCC expressed a desire to work more closely with WWL on the Porirua Master Plan

Session 4 – Freshwater Management Units for Te Awarua-o-Porirua

See presentation on Te Awarua-o-Porirua Whaitua Committee webpage, and Summary FMUs report.

Ton presented the initial Te Awarua-o-Porirua Whaitua FMUs to the Committee, and questions followed. Key points from the discussions are below.

FMUs: what they are and aren't

- We need to divide up catchments in space, so we can achieve the right scale for managing water
- The "Goldilocks" resolution between too broad-brush (management that's sometimes inaccurate/ inappropriate), and too fine-scale (management is prohibitively complex & expensive).
- FMUS are not just a simple subdivision of catchment; they are a basis for justifiable plan provisions where objectives differ in different parts of catchment. They are needed to justifiably provide a basis for:
- different plan development processes (e.g. community consultation versus developing specific management polices).
- management of different issues (e.g. water quality versus water quantity), and
- different management functions (e.g. setting objectives versus accounting for resource use and consenting water takes).
- There was a question about whether scenarios are modelled based on FMUs. They are not – they are modelled at whole-catchment scale - but results are presented to differentiate between different parts of the catchment with different characteristics. At this stage, CMP only need to know about the principles.

- Benefits of FMU approach: it's easily modified, transparent, rule-based, with inherent logic in the way it supports objectives applied to water bodies and management applied to surrounding land use.
- Principles are most important to get right at this stage, not the specific patterns.

These initial FMUs: objective, starting point

- This initial set of FMUs is just the start, generated with a technical exercise that started with checking & formalising off the Committee's initial FMU map.
- FMUs are ultimately defined by the chosen management objectives and where they are applied, which is a series of socio-political choices made by the decision-maker (Committee).
- These FMUs, dominantly objective, are intended to be adjusted as the Committee's socio-political thinking evolves and (e.g.) we recognise where policies should be applied.
- This is the start of the process.

- Later on, can incorporate sites of special interest, social, cultural &/or economic considerations.
- It's the principles that are most important, not the specific patterns.

Identifying FMUs: start by grouping water bodies (classification)

- We want to be reasonably sure about current state and how we are progressing toward our objectives in future.
- A comprehensive monitoring network provides a detailed picture of water quality. But our data is limited (long term water quality monitoring is expensive) - current monitoring network is limited to 4 sites in TAOP whaitua that indicate different parts of catchment. (NB: MCI = Macroinvertebrate Community Index)
- Need to make the most of our available data in finding appropriate commonalities to divide up the catchment
- Therefore we start with classifying water bodies based on general principles (apply to all catchments).
- Classification systems are used to manage variation (e.g. in catchment characteristics (geology, topography etc.)) and in management approaches.
- Different classifications:
    - may be associated with different values people hold in land or water,
    - and have difference capacity for resource use
    - and will respond in different ways to pressures/change/management
- Classifications can help us to fill in the gaps between the monitoring locations (infer the whaitua water quality for which we don't have data).
- We can combine the resulting groupings / classifications of water bodies with real-world data to see how well they explain the real-world water quality observations.

General principles that apply to catchments

- First basis of classifications: biophysical and catchment characteristics. (Later on, can incorporate sites of special interest, social, cultural &/or economic considerations.)
- Different land uses, land forms etc. (catchment characteristics) tend to produce particular effects on water quality.
- Urban areas tend to have particular signature, i.e. biophysical characteristics vs land use. Generally find poorer water quality in urban areas, higher nitrogen (N) & phosphorus (P)
- Upstream affects downstream, therefore (e.g.) some urban streams are deemed rural because of the dominant upstream influence.
- We assume that water bodies with similar catchment characteristics:
- have similar states (e.g. water quality)
- have similar values (e.g. fishing, swimming) and associated objectives
- respond in similar ways to pressures/change/management

Classifications for TAOP

- Many different classifications were tested, and the following classifications were most appropriate:
- TAOP Whaitua's streams grouped into three freshwater "management classes" based on land cover and slope:
- land cover groups = Urban, Rural
- Rural subdivided further into Hill, Lowland
- streams then further categorised by which receiving environments (coast) they drain to: Taupo Swamp, Porirua Harbour, open coast.
- Combinations of these give 6 potential classes of which 5 actually occur.

Methodology implications

- The analysis shows the recommended management classifications discriminate streams with differing water quality state
- The box and whisker plots show that segments in each of the management classes have similar water quality states and there are differences between classes.
- In other words the recommended classifications do a pretty good job of [matching / predicting / reflecting] the real-world state of water quality.
- There was a question about whether FMUs approach has been used elsewhere.
- Ton explained that "FMUs" are a new term but not a new or foreign concept – it's simply a structured, transparent way to recognise catchment-based management.
- FMUs in NZ have mostly been applied in rural catchments so far; TAOP will be one of the first cabs off the rank to apply them in metropolitan area

Complications for FMUs

- Complication in catchment is that some streams are characterised by rural environment but affected by urban considerations such as stormwater management to maintain objective set. However, it would be easy to identify special provisions for particular waterways e.g. rural but with over 10% urbanisation with high influence from urbanisation and to create special zones.
- Other areas drain to more than one receiving environment, therefore Committee may need to consider different objectives to so that policies don't omit some impacts.

Tweaking initial FMUs: Porirua Stream & Titahi Bay

- There were questions about the classification of Porirua Stream, including:
- Percentage of catchment urbanised is under threshold (15%) for classifying "urban" but 10% imperviousness has ecological impacts
- Also relatively short stretch of urbanised catchment causing degrading impacts (relatively pristine upstream)
- When that rural stream flows through urban/or urbanisable area Committee may want to have a special management zone because there may be policies designed to fit those contexts.

- There were also concerns that the land south of Titahi Bay should be included in the catchment because it is a major site of poor water quality, also that important fishing area goes around the point – which should be included.
- Alastair explained that the focus at this stage should be on the principles and issues, broad considerations to get roughly right – rather than worrying about specific areas.
- The sequence is starting the conversation (using refined basic FMUs) in terms of management options, funnel to policies; then refine to spatial awareness. Specific spots / areas (such as important fishing areas, outfalls) can be considered then.

Monitoring, lumping & splitting catchment

- There were questions about the apparent paucity of monitoring points, and about the appropriate level of granularity/coarseness and complexity in the monitoring and analysis.
- Alastair explained that Committee can divide as much as people like, but the more FMUs there are the more administrative complexity.
- Ton's approach is towards "lumped" end of the spectrum; so there is room for further subdivisions if deemed appropriate by the committee.
- Experience in Ruamāhanga is that there will be changes from initial FMUs.
- Modellers only need to know about the principles at this stage.
- There was an observation that the Ruamāhanga scenarios seemed to be

based on FMUs early in their development process.
- Ton explained that when the scenario modelling outputs are presented (grouped by classes defined in the report) there should be some coherence.

Water quantity & allocation: limits

- Water abstraction (taking) happens mainly for irrigation or town supply.
- Two limits: minimum flow (when restrictions on take apply) and allocation rates.
- Limits usually defined by MALF. (Mean Annual Low Flow) -"the lowest flow in the average year"– see slides 16-17.

- Habitat suitability is defined by water flow (quantity) and velocity (speed), which area different depending on the value or animal in question.
- MALF is usually a point of decline for habitat.

- Allocation rate is the "band" between minimum flow and management flow.
- If stream is at minimum flow + allocation rate, take needs to be reduced to respect / protect minimum flow.
- Reliability at minimum flow = 92% therefore ~8% of time you may not be allowed to take water.

- In FMUs, minimum flow and allocation limit are defined by MALF.
- Specific quantities and speeds of water at limits and minimum depend on the values for which the stream is being managed: fish or eel habitat, or any other value (e.g. recreation) that is dependent on there being some flow in the stream.

Quantity & TAoP FMUs

- In Porirua, there is very little different between flow and habitat across catchment.
- Therefore there is no need for different spatial management units in the catchment based on water quantity
- Rules in regional plan provide for: 30% of MALF for allocation and 90% of MALF for minimum flow, resulting in small deterioration in habitat quality but little change in reliability.

Action: Any further questions can be directed to the project team to pass to Ton who will finalise the report in December.

Session 5 – Opportunities in Parks & Recreation Domains

This session aimed to inform the Committee about opportunities for alignment between whaitua committee work and work in PCC's Recreation and open Spaces (ROSS) review, and by GWRC in its Parks department.

Due to time overruns this session was not held and will be rescheduled for a future Committee meeting.

Session 6 - Any other business

There were no requests for additional items at this stage. The meeting closed at 9.20pm

NEXT MEETING: December 15, 5pm, Takapuwahia marae