

AGENDA

| | |
|----------------|--|
| SUBJECT | Whaitua Te Whanganui-a-Tara Committee Meeting |
| WHEN | Wednesday 21 July 2021, 9am-5pm |
| WHERE | GWRC Council Chambers (100 Cuba St, Wellington) |

9:00am – Tea and coffee on arrival

9:10am – Committee only session

9:30am – Karakia and opening, general business

9:45am – Update on the web WIP development

10:00am – Te Kāhui Taiao presents draft Te Mahere Wai

10:30am – Morning tea

10:45am – Presentation and discussion on Te Mahere Wai continued

12:00pm – Lunch

12:30pm – Target setting for remaining catchments

2:30pm – Afternoon tea

3:00pm – WIP feedback and process for review

4:30pm – Finalising recommendations

- Recommendation 84 – rainwater tanks
- Draft recommendations from Ros
- Recommendations to review with TKT

5:00pm – Karakia and closing

MEMO

TO Whaitua te Whanganui a Tara Committee

FROM TWT Project Team

DATE 21 July 2021

SUBJECT Response to questions and advice on remaining catchments for target setting

Purpose:

This memo includes expert comment on the remaining catchments that were not covered on the 30 June target-setting workshop. Below are projected targets for the remaining catchment areas and commentary from Brent, Helli and Mark. This is to offer perspective on the shift in state expected as a result of the committee's recommendations and what scale of further effort may be required to achieve further improvements. Comments focus on where an improvement in the NOF attribute band is not showing or the bottom line may not be met in a generation (20-30 years, depending on speed of implementation). We have provided this advice in a similar format to the place-based commentary in the draft WIP.

Also included is a response to questions about these remaining areas.

At Wednesday's meeting we will continue the decision process from the 30th to:

- a) Committee adjusting any generational targets based on advice, including whether indicate further improvements in the longer-term.
- b) Agree additional commentary and direction you want in the WIP to address what is needed to achieve the shifts desired in these catchments.

Extra note Parangarahu Lakes – Kohangatera and Kohangapiripiri

Catchment Area: Korokoro

| <p>Catchment Spatial Area (Insert 1/3 page)</p> <p>Whakapapa (pending approval from TKT or cross-reference to Te Māhere Wai)</p> <p>Catchment context(to be drafted – if you are happy with the format of Te Awa Kairangi section above)</p> <p>This is a Ngā Taonga nui a Kiwa area of significant cultural value to mana whenua as acknowledged in the current PNRP.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------|----|---------|---|-------------|------------|---|---|---------|-------------|----------------------------|--------------------|---|---------------------------------|--------------------------|---|---|---|---|-------------|--|--|--|--|----------------------------|--|--|--------------------|--|-----|--|--|------------|--|--|------|--|--|--------------------|--|----------------|--|--|---------|--|--|---------|--|--|---------|--|--|---------|--|--|---|---|---|---|-------------|---|---|---|---|-------------|---|---|---|---|-------------|---|---|---|---|-------------|-----------------|---|---|---|---|--|---|---|---|---|--|---|--|---|---|--|---|--|---|---|--|--------------------|---|----|---|---|--|---|---|---|---|--|------------|--|--|---|--|---|---|--|
| <p>Primary Issues, Pressures or Risks (to be drafted – if you are happy with the format of Te Awa Kairangi section above)</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Additional direction for achieving targets (TBC following Committee decision-making)</p> <p>It is unlikely that change can be realised in many of the ecological attributes within a generation. However, the desired longer term pace for change is fast in this catchment because of the importance of the Korokoro Stream to mana whenua. A fast pace of change is going to be a difficult challenge to achieve as:</p> <ul style="list-style-type: none"> • significant infrastructure improvement is needed in the lower catchment • habitat restoration is needed in some urban and rural sub-catchments • the anticipated impacts of climate change need off-setting in the estuary • The longer response time of estuarine environments to changes in the catchment and the legacy effects of contaminants. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Sub-catchment Tables</p> <table border="1"> <thead> <tr> <th rowspan="4">Te Kahui Taiao catchment groups</th> <th colspan="10">Ecological target states</th> <th colspan="3">Human health target states</th> </tr> <tr> <th colspan="2" rowspan="2">Current trajectory</th> <th colspan="3">MCI</th> <th colspan="3">Periphyton</th> <th colspan="3">Fish</th> <th colspan="2" rowspan="2">Current trajectory</th> <th colspan="3"><i>E. coli</i></th> </tr> <tr> <th colspan="3">Targets</th> <th colspan="3">Targets</th> <th colspan="3">Targets</th> <th colspan="3">Targets</th> </tr> <tr> <th>C</th><th>T</th> <th>S</th><th>G</th><th>Longer term</th> <th>C</th><th>T</th><th>S</th><th>G</th><th>Longer term</th> <th>C</th><th>T</th><th>S</th><th>G</th><th>Longer term</th> <th>C</th><th>T</th><th>S</th><th>G</th><th>Longer term</th> </tr> </thead> <tbody> <tr> <td>Korokoro Stream</td> <td>B</td><td>↓</td> <td>B</td><td>A</td><td></td> <td>B</td><td>↓</td> <td>B</td><td>B</td><td></td> <td>A</td><td></td> <td>A</td><td>A</td><td></td> <td>C</td><td></td> <td>C</td><td>B</td><td></td> </tr> <tr> <td>Korokoro Estuary *</td> <td>C</td><td>↓↓</td> <td>C</td><td>C</td><td></td> <td>B</td><td>↓</td> <td>B</td><td>B</td><td></td> <td colspan="3">No targets</td> <td>C</td><td></td> <td>C</td><td>B</td><td></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Te Kahui Taiao catchment groups | Ecological target states | | | | | | | | | | Human health target states | | | Current trajectory | | MCI | | | Periphyton | | | Fish | | | Current trajectory | | <i>E. coli</i> | | | Targets | | | Targets | | | Targets | | | Targets | | | C | T | S | G | Longer term | C | T | S | G | Longer term | C | T | S | G | Longer term | C | T | S | G | Longer term | Korokoro Stream | B | ↓ | B | A | | B | ↓ | B | B | | A | | A | A | | C | | C | B | | Korokoro Estuary * | C | ↓↓ | C | C | | B | ↓ | B | B | | No targets | | | C | | C | B | |
| Te Kahui Taiao catchment groups | Ecological target states | | | | | | | | | | Human health target states | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Current trajectory | | MCI | | | Periphyton | | | Fish | | | Current trajectory | | | <i>E. coli</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Targets | | | Targets | | | Targets | | | | | | Targets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | C | T | S | G | Longer term | C | T | S | G | Longer term | C | T | S | G | Longer term | C | T | S | G | Longer term | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Korokoro Stream | B | ↓ | B | A | | B | ↓ | B | B | | A | | A | A | | C | | C | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Korokoro Estuary * | C | ↓↓ | C | C | | B | ↓ | B | B | | No targets | | | C | | C | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Te Kahui Taiao catchment groups | Ecological toxicity | | | | | | | | Sediment | | | | Nutrients | | Dissolved oxygen | | |
|---------------------------------|---------------------|---|---------|---|------------|------------|------------|------------|----------|---|------------|------------|------------|------------|------------------|------------|------------|
| | Copper | | Zinc | | Nitrate | | Ammonia | | Clarity | | Deposited | | Phosphorus | | oxygen | | |
| | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | |
| | S | G | S | G | S | G | S | G | S | G | S | G | S | G | S | G | |
| Korokoro Stream | A | A | A | A | A | A | A | A | A | A | A | A | A | B | A | A | A |
| Korokoro Estuary * | A | A | A | A | No targets | No targets | No targets | No targets | A | A | No targets | No targets | No targets |

Current trajectory with a single arrow (↓) indicate that deterioration within an attribute state is expected with continued management of stressors upon that attribute. A double arrow (↓↓) indicates that an attribute state deterioration is expected.

Targets that are the same within a generation are seeking an improvement within an attribute state within the generation and an improved attribute state is sought over longer timeframes.

* Targets for coastal environments use attributes specific to those environments shown under similar river attribute headers: Benthic Macroinvertebrates are presented under MCI, Macroalgae under Periphyton, *Enterococci* under *E. coli*, and Muddiness under Deposited Sediment.

Other comments/ footnotes (anything that helps the reader understand the NOF tables e.g. C phosphorous in Wainuiomata is natural state).

Catchment Areas: Wellington Urban, Southern Coast and Te Whanganui a Tara Inner Harbour

Catchment Spatial Area

(Insert 1/3 page)

Whakapapa (pending approval from TKT or cross-reference to Te Māhere Wai)

Catchment context(to be drafted – if you are happy with the format of Te Awa Kairangi section above)

Primary Issues, Pressures or Risks

(to be drafted – if you are happy with the format of Te Awa Kairangi section above)

Additional direction for achieving targets (TBC following Committee decision-making)

- In order to achieve our generational target x,y and z will need to happen
- These attribute targets are expected to be achievable with the implementation of our recs...
- Comment/ perspective on what is happening with the
- Generally, keep to focus on the outcomes attributes, some comment will be on the stressor's

Wellington urban streams

MCI (macroinvertebrate index) and E.Coli

- Some of the worst ecological conditions are in our urban areas with in-stream habitat disturbance and discharge of toxicants being significant stressors, along with sediment. While our monitoring sites don't show the worst conditions, making improvements from fair, and in some streams that are worse will be challenging. The worst off streams are affected by lack of space, no vegetation for shading, abnormal flows from stormwater, contaminants and straightening to protect houses from flooding. Some streams do have shading and space, but are likewise affected by abnormal flows, contaminants and flooding defenses.
- Improving the state of macroinvertebrates in our urban streams will require making fundamental changes to the hydrological effects of urban stormwater, enhancing the form and function of streambeds and significant habitat restoration. An urban renewal project at this scale goes beyond our general recommendations and requires further locally specific diagnostic assessment and integrated planning with mana whenua and community direction.
Stream restoration would involve the rebuilding of habitat and the meandering form to the stream, which would have implications for current land use and this would have to be worked through with specialist advice and with mana whenua and community direction. This style of project can be likened to Riverlink or Porirua East Regeneration and could take up to 25-30 years to implement. The Eastern Porirua Regeneration project, a partnership between Ngāti Toa Rangitira, Porirua City Council and Kainga Ora, is investing 1.5 billion over the next 25 years. That project is progressively planning, consenting, demolishing existing houses and rebuilding new housing and infrastructure in the eastern Porirua suburbs.

- It is understood that over time this level of works will be required in similar heavily modified urban streams across the whaitua.
- Should in these catchments - GWRC, mana whenua and relevant TA's with their communities begin processes and planning for these renewal works to take place over time in order to ensure environmental bottom lines are met and Te Mana o te Wai is achieved?
- Existing processes such as renewal of infrastructure should be used to provide information and basis for this urban renewal planning.
- Future urban intensification must prevent further degradation and new developments must be designed in such a way to be consistent with achieving the target state improvements in the longer term.

Periphyton (algae)

- Without further intervention, the periphyton (algae) in our streams is expected to get worse. With full implementation of our recommendations we expect to halt this decline, from there it may take some time of see a clear improvement in the levels of periphyton. Our recommendations will help offset the negative effects of climate change and urban growth on periphyton growth in urban streams,
- Stream shading and nutrient reductions will be significant in achieving an attribute state shift, which we expect will occur over the longer term. This target state improvement will require additional locally specific diagnostic assessment beyond our current information and catchment planning with mana whenua and communities to identify the highest benefit places for riparian planting for shading and addressing wastewater leakages, overflows and stormwater inputs will be important to this goal. Any local catchment planning needs to be an integrated management approach consistent with the requirements Te Mana o Te Wai.

Sediment

- The nature of sediment transport and deposition through our urban streams means we have a highly variable understanding of exactly where sediment is having the greatest effect in our streams. We do know, however, that earthworks and the effect of the urban environment on flows and stormwater input are high contributors of sediment to our urban streams. Shifting attribute state in urbans streams will require making a fundamental change to the hydrology effects of urban stormwater and restoring the form and function of streambeds. We are recommending best-practice water sensitive urban design (WSUD) is adopted now and into the future, as this is applied across urban redevelopment we expect to see the state in sediment clarity to improve in urban streams.

Kaiwharawhara Estuary

- The channelisation of the Kaiwharawhara Estuary means its natural processes no longer operate as they should, contaminants are essentially flushed through the channel and it has an 'artificial' A state for most 'water quality' parameters. However, the lack of natural habitat affects the overall poor ecosystem health and will take a very long time to restore. An unusual challenge associated with restoring the habitat and natural processes in Kaiwharawhara Estuary is that while ecosystem health and cultural values may increase, other parameters may reduce as flows slow down through the estuary and contaminants can accumulate. Catchment actions to reduce the inputs may help, but it's uncertain if this would be sufficient to maintain this 'artificial' A state for these parameters.

Wai Tai (Wellington south coast)

- Wai tai open coastal waters remains in a good state. A naturally low state of benthic macroinvertebrates is expected along this coastline because of the harsh stony environment, therefore this is unlikely to increase beyond a B state. Enterococci in the embayments along the coast may be worse than indicated and take a longer term to reach the B state targets.
- This stretch of coastline, which includes the Taputeranga Marine Reserve, may also be impacted by poorly understood freshwater impacts (including emerging contaminants such as landfill leachate and personal care products, medicine etc. in wastewater).

Te Whanganui-a-Tara (inner harbour)

- Much of the waterfront has been reclaimed and natural stream estuaries piped and there is some site variation in attribute states within the embayment’s around the inner harbour according to the associated level of urban impacts.
- The current state and targets reflect the whole inner harbour, though there are hotspot sites for metals contamination in benthic sediment, particularly around the Queens Wharf and Port areas. This contamination is primarily from point source discharges from the stormwater network and heavy industry. Controls are required to prevent these hotspots degrading further in addition to preventing increases in metals in streams.
- Depositional basins will always have naturally high muddiness and it is difficult to improve significantly although improvements within the D band (A band for Evan’s Bay) may occur over time.
- Benthic macroinvertebrates will likely improve within the existing state, as these are associated with legacy effects to sediment and metals. This gradual shift will take multiple generations for the worst sites and potentially shorter timeframes at more resilient sites.
- Enterococci in the inner harbour sites should improve to a B-state following the proposed significant improvements to infrastructure, sites of significance and high recreational use may determine the priority order of those works.

Sub-catchment Tables

| Te Kahui Taiao catchment groups | Ecological target states | | | | | | | | | | | Human health target states | | | | | | | | |
|---------------------------------------|--------------------------|----|-----|---|-------------|--------------------|---|------------|---|-------------|--------------------|----------------------------|------|---|-------------|--------------------|--|---------|---|-------------|
| | Current trajectory | | MCI | | | Current trajectory | | Periphyton | | | Current trajectory | | Fish | | | Current trajectory | | E. coli | | |
| | | | S | G | Longer term | | | S | G | Longer term | | | S | G | Longer term | | | S | G | Longer term |
| Kaiwharawhara Stream | C | ↓ | C | C | | C | C | C | | A | A | A | | E | E | C | | | | |
| Kaiwharawhara Estuary * | C | | C | C | | A | A | A | | No targets | | | C | C | B | | | | | |
| Wellington urban | C | ↓ | C | C | | C | C | C | | A | A | A | | E | E | C | | | | |
| Wai Tai (southern coast) * | B | | B | B | | A | A | A | | No targets | | | B | B | B | | | | | |
| Te Whanganui-a-Tara (inner harbour) * | B | ↓↓ | B | B | | A | A | A | | No targets | | | C | C | B | | | | | |

| Te Kahui Taiao catchment groups | Ecological toxicity | | | | | | | | Sediment | | | | Nutrients | | Dissolved oxygen | |
|---------------------------------------|---------------------|---|---------|---|------------|------------|------------|------------|----------|---|------------|------------|------------|------------|------------------|------------|
| | Copper | | Zinc | | Nitrate | | Ammonia | | Clarity | | Deposited | | Phosphorus | | | |
| | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | |
| | S | G | S | G | S | G | S | G | S | G | S | G | S | G | S | G |
| Kaiwharawhara Stream | C | C | B | A | B | B | B | B | A | A | A | D | C | A | A | |
| Kaiwharawhara Estuary * | A | A | A | A | No targets | No targets | No targets | No targets | A | A | No targets | |
| Wellington urban | D | D | B | A | B | B | B | B | D | C | B | B | D | D | A | A |
| Wai Tai (southern coast) * | A | A | A | A | No targets | No targets | No targets | No targets | A | A | No targets | No targets |
| Te Whanganui-a-Tara (inner harbour) * | A | A | B | B | No targets | No targets | No targets | No targets | D | D | No targets | No targets |

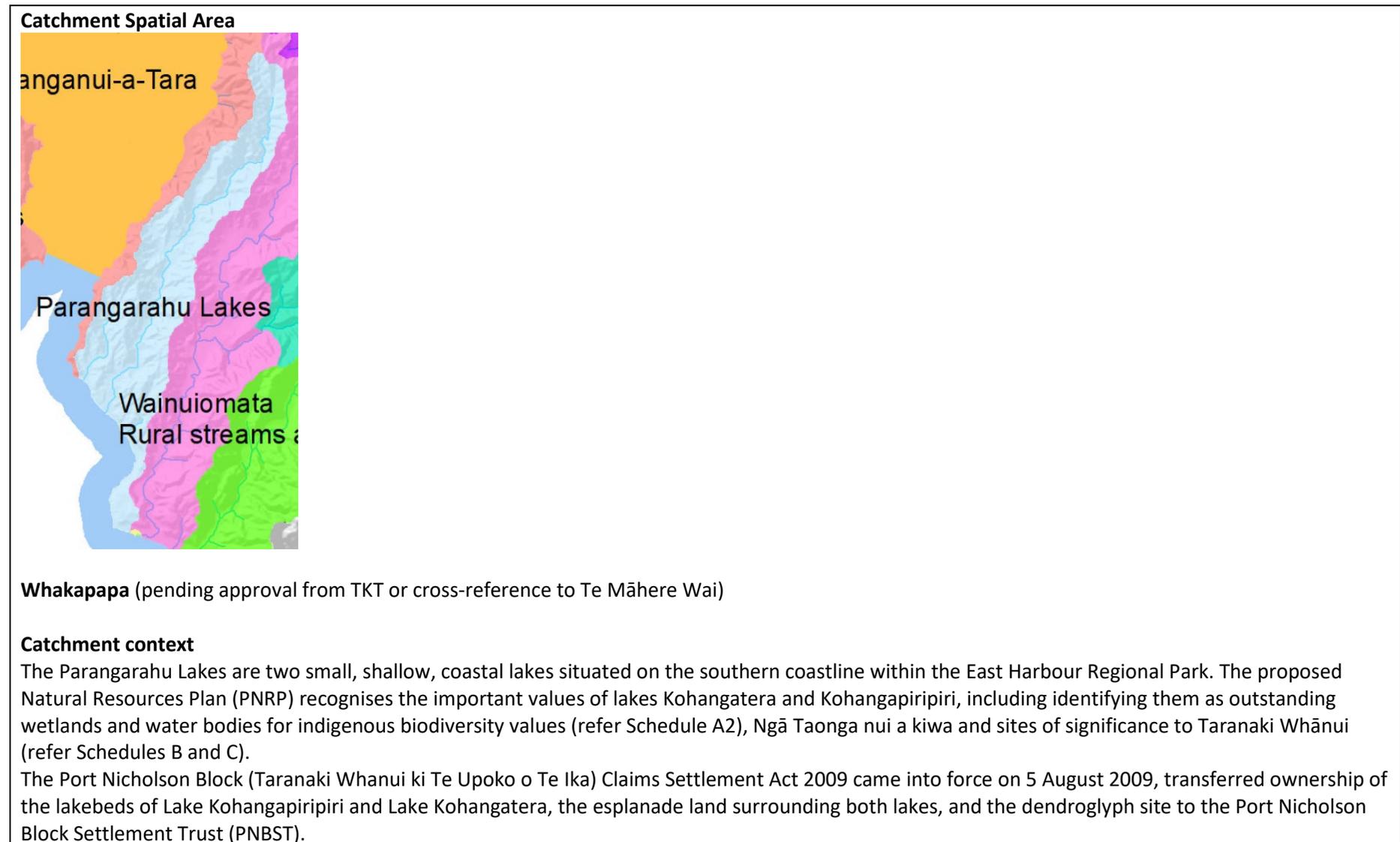
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Other comments/ footnotes (anything that helps the reader understand the NOF tables e.g. C phosphorous in Wainuiomata is natural state).

Catchment Area: Parangarahu Lakes



Moemoeä - Vision Kohangapiripiri – Kohangatera - Kohanga Ora Nests nurturing life and well-being

The outcomes – which are the Indicators of life, health and well-being are:

Tuna Heke - Restoration of the eel and native fishery of the Lakes as a self-replenishing mahinga kai for Taranaki Whānui

Manu Korihi - Flourishing forested landscape and healthy wetland-lake ecosystem sustains multitudes of birds and indigenous species and a revitalisation of Taranaki Whānui cultural practice; and

Tangata Kaitiaki - Managers, Visitors and Taranaki Whānui are active Kaitiaki protecting the catchments as taonga which contributes to personal, community and tribal wellbeing

The catchment streams are also listed in Schedule F1 (Rivers and Lakes with significant indigenous ecosystems)

| | | | | | |
|--|----------------|--|--|--|--|
| Lake Kohangapiripiri and Cameron Creek | | Lake Kohangapiripiri and tributaries | | | Common bully, giant bully and giant kokopu |
| Lake Kohangatera and Gollans Stream | Gollans Stream | Lake Kohangatera, Gollans Stream and all tributaries | Lake Kohangatera, Gollans Stream and all tributaries | | Banded kokopu, common bully, giant bully, giant kokopu, inanga, lamprey, longfin eel and redfin bully and shortfin eel |

Primary Issues, Pressures or Risks

(to be drafted – if you are happy with the format of Te Awa Kairangi section above)

Please refer to the [Small Group information memo](#)

Additional direction for achieving targets (TBC following Committee decision-making)

Parangarahu Lakes

Targets for Parangarahu Lakes in the table represent a significant shift. This recognises these being taonga to mana whenua and reaching these targets will require greater change through your general recommendations. To be specific, targeted diagnostic monitoring will be required in the short-term to get a more accurate understanding of pressures in the catchment and prioritised integrated catchment and farm environment planning.

These Lakes face significant risk to their current state from the presence of invasive plant species and concern has been raised about the current level of public access.

The vision has been expressed by mana whenua as a return to a pristine state and eventual restoration of the catchment, this was likened to the 500 year vision for Zealandia and the East Harbour forest park (butterfly creek headwater) as a reference for this natural state.

Actions likely to achieve these shifts in a generation include good environmental farm practice addressing:

- Stock exclusion for wetlands (required in national regulation)
- Stock exclusion for Gollan’s stream and 1m wide tributaries (required in national regulation on low-slope land). This will also address stock exclusion for low-lying wetlands adjacent to streams.
- Seepage wetlands in catchment assessed through catchment and farm environment planning
- Erosion risks with focus on stream-bank sources through catchment and farm environment planning. This will also reduce phosphorous sources.

Sub-catchment Tables

| Sub- catchment areas | Ecological target states | | | | | | | | | Human health target states | | | | | | | | | | |
|----------------------|--------------------------|---|---------|------------|-------------|--------------------|------|---------|---|----------------------------|--------------------|---|---------|---|-------------|---|---|---|---|--|
| | MCI | | | Periphyton | | | Fish | | | <i>E. coli</i> | | | | | | | | | | |
| | Current trajectory | | Targets | | | Current trajectory | | Targets | | | Current trajectory | | Targets | | | | | | | |
| | C | T | S | G | Longer term | C | T | S | G | Longer term | C | T | S | G | Longer term | | | | | |
| Catchment streams | C | ↓ | C | B | | C | ↓ | C | B | | A | | A | A | | E | | E | C | |
| Parangārahu Lakes | C | | C | A | | A | | A | A | | No targets | | | C | | C | A | | | |

| Sub- catchment areas | Ecological toxicity | | | | Sediment | | Nutrients | | Dissolved oxygen | | | | | | | | |
|----------------------|---------------------|---|------------|---|------------|---|-----------|---|------------------|---|------------|---|------------|---|------------------|---|---|
| | Copper | | Zinc | | Nitrate | | Ammonia | | Clarity | | Deposited | | Phosphorus | | Dissolved oxygen | | |
| | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | Targets | | |
| | S | G | S | G | S | G | S | G | S | G | S | G | S | G | S | G | |
| Catchment streams | A | A | A | A | A | A | A | A | A | D | C | D | C | D | C | A | A |
| Parangārahu Lakes | No targets | | No targets | | No targets | | A | A | No targets | | No targets | | C | B | No targets | | |

Needs reedit to have the right columns and headers for the lake attributes

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Other comments/ footnotes (anything that helps the reader understand the NOF tables e.g. C phosphorous in Wainuiomata is natural state)

Responses to Committee Questions

Responses to additional comments and questions about target states in areas not covered during the Committee meeting.

Q: On commentary about *'it is unclear whether fixing the wastewater network across in all urban catchments is achievable in a generation'*.

A: The targets expressed reflect the anticipated outcomes of successfully removing wastewater faults, and implementing high performance storm water practices in all new development and through large parts of our existing urban landscape. Therefore, the targets and recommendations are matched – based on the information available at this time.

In this way, your targets set the direction to hold the line and improve within a generation, and your recommendations describe the efforts required to achieve those. Together, these help apply the pressure to make it happen and for relevant agencies to manage the barriers to sufficient uptake of necessary practice changes.

The commentary signals areas where there may be questions over the ability to address barriers within the suggested time in achieving those high levels of management change. For example, in addition to funding, wastewater improvements will require sufficient management of:

- investigation and diagnoses of faults,
- resources and materials (e.g. diggers, pipes),
- transport disruption,
- workforce capacity and capability,
- politics,
- uncertainty in institutional structures and regulatory environments.

This does not necessarily lead to a lower target or changes in the recommendations, though it is acknowledgement that these targets and pace of recommendations represent a very significant shift in the scale of investment and implementation.

Q: On priority sites for stormwater treatment interfacing with other outcomes.

A: The water sensitive scenario assumed some rather ambitious stormwater treatment mitigations. For example, 90% of road area was assumed to drain to treatment, runoff from existing paved commercial and industrial areas was assumed to be treated and replacement of existing high yielding zinc roofs was presumed. Although, the committee's stormwater recs address most of the key issues they were not assessed to go as far as those under the water sensitive scenario. For example, the committee cannot mandate that all existing and high yielding zinc residential and commercial roofs are removed/replaced. Moreover, the uptake of subsidies and education at highest risk/existing sites/roads is unlikely to equate to 90% of road area being treated within a generation.

Regarding source vs bottom of the pipe treatment, we would recommend a holistic approach that aims to reduce the source of contaminants before they enter the pipe (i.e., not using zinc based paint) as well as runoff treatment (i.e., constructed wetlands) at the end of the pipe. Once mitigation that the committee may like to consider is street sweeping.

Q: Whether Parangarahu Lakes targets can be met by current recommendations?

Targets for improvements in the Lakes as a receiving waterbody will require mitigations and improvements in the upstream catchment, especially around E.coli, sediment and phosphorous and habitat. The Gollan's stream catchment is covered by updated low-slope land stock exclusion requirements, which will increase fencing and exclusion through this catchment. The catchment state assessments are proxy from areas with likeness in geology and land use. Specific diagnostic monitoring will be required to determine the most effective land management measures in the catchment. Good practice land management to address additional measures for stock exclusion from wetlands, stream bank erosion, riparian habitat and hill erosion can

A: This is one exception to the general approach that the targets are set commensurate with the expected outcomes as a result of the recommendations being successfully implemented. Targets for improvements in the Lakes as a receiving waterbody will require mitigations and improvements in the upstream catchment, especially around E.coli, sediment and phosphorous and habitat. The Gollan's stream catchment is covered by updated low-slope land stock exclusion requirements, which will increase fencing and exclusion through this catchment. The catchment state assessments are proxy from areas with likeness in geology and land use. Specific diagnostic monitoring will be required to determine the most effective land management measures in the catchment. Good practice land management to address additional measures for excluding stock from and restoring wetlands, stream bank erosion, riparian habitat and hill erosion can be addressed through both farm environment and integrated catchment planning processes.

Beyond your current recommendations, you may choose to prioritise in the short-term the Parangarahu Lakes' catchments for supported farm environment and integrated catchment planning that involves mana whenua, landowners and communities. Over a generational timeframe the target improvements are expecting to be achievable with this extra effort.

Q: On coastal targets and prioritisation.

A: Yes, the targets include those for coastal areas. The targets have been described across relatively broad areas, and do not have high resolution to express the prioritisations between catchments of an area as Anya describes. However, you have also expressed some prioritisation criteria that could be used in institutions work programme sequencing. In those you identified for example,

- worst first
- Mana whenua sites of significance
- places with community connection. This could include those with 'friends of...groups, may include recreation usage?
- Places where the environment is approaching threshold risks
- Environmental uniqueness (eg, rarity of ecosystem, perhaps the marine reserve?).

Q: On primary health/swimmability requirements in the NPS and what direction the committee wants to give on where they apply in terms of swimming spots or for which bits of waterways we are putting within the by length requirements?

A: The project team understands the committee's interpretation of primary human health values as applying to all waterbodies and locations no matter the size of the waterbody. This is driven by multiple reasons; mahinga kai as a compulsory value, urban streams becoming safe to play for children, cultural practices such as tohi (baptism) requiring very high water quality, restoring mauri requiring the removal of human waste from waterways. This also means that the need for improvement is not only driven by *swimming* values and goes well beyond these sites to *all* sites.

Unless the committee wants to determine *priority sites* in addition to the prioritisation criteria, then all locations in waterbodies are understood as having primary contact values to maintain improve toward over time.

E.Coli targets in the plan will apply for all four individual attribute measures equally (including the 95th percentile), timeframes do not get set differently for this. The NPS-FM 2020 target for 90% of fourth order streams to be 'swimmable' (C-state or above), suggests this is a nationally directed timeframe for those waterbodies in the whaitua. For all other smaller streams, there is no directed timeframe in the NPS-FM however your values make clear the need for measures for improvement in all places. The long-term environmental outcome can be set to be consistent with "A+ state everywhere"; this will drive improvement. Articulating this will ensure it is clear to the planning process that the desire for continuous improvement should not stop at the generational

target while acknowledging that the pathway to meet these targets remains uncertain and may be subject to change in future Whaitua processes and as technology advances.

Q: On commentary that disagrees with or does not accept the expert assessments.

A: The targets reflect the expected outcomes of full implementation of your recommendations. This has been done by assessing how your recommendations match to the assumed expert panel scenario mitigations, then adjusting those expert panel assessments accordingly. You are welcome to accept or reject this expert assessment in your target setting. Any reasoning for these differences will be important for next steps after the WIP in the planning process.

MEETING NOTES

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| SUBJECT | Whaitua Te Whanganui-a-Tara Committee workshop notes |
| WHEN | Wednesday 21 July 2021, 9am-5pm |
| WHERE | GWRC Council Chambers (100 Cuba St, Wellington) |
| ATTENDEES | Pat, Louise, Kara (until 12pm), Pete, Zoe (Teams), Sam, Anya, Tui, Hikitia (Teams until 12pm), Jonny, Ros (from 11.30am) |
| APOLOGIES | Roger, Naomi, Gabriel, Sean, Wayne |
| PROJECT TEAM | Matt, Tim, Phill, Kat, Emily O., David, Richard, Nora, Fleur, Mike, Vanessa, John, Glen, James, Emily T. |

21 July workshop agreements

Update on the web WIP development

A: The next session with the live illustrator and design team will be on Friday 30 July. Emily to send invite to Committee members.

Te Kāhui Taiao presents draft Te Mahere Wai (TMW)

D: TMW and the WIP to be received by Council at the same time. Potential extension to present at the 23 September meeting to ensure there is adequate time to complete both to the Committee's satisfaction and enable mana whenua to test TMW with their iwi boards.

A: PT to review both documents to identify places in the narrative and recommendations where they can cross reference and endorse each other. Check for any points that may not be in alignment.

D: WIP to reference TMW recommendations specifically relating to mahinga kai, the waiaria framework for attribute measures and manawhakahaera, or mana whenua involvement in governance and decision-making.

Workshop with GW Council on 27 July

D: Agreed purpose of workshop to build on the last presentation to the Environment Committee to test draft WIP and TMW recommendations and target states, and build Council's comfort and confidence with the two documents and how they relate.

A: PT to develop presentation materials for GW Council workshop for the co-chairs to review and then circulate to the full Committee.

D: Committee to send all draft recommendations to GW Council for 27 July workshop and then circulate the complete list for final comment.

Target setting for remaining catchments

D: Agreed that the Committee shares the aspiration for wai ora across all waterbodies in the whitua in the long term. Target states indicate projection based on the expert panel scenarios but do not reflect the Committee (or community and mana whenua) aspirations. Change wording in WIP from “target attribute states” to “predicted/projected attribute states.”

D: For Korokoro where the target state shows B to B from short term to generational – need to show an upward trend and the pathway to A+ over multiple generations.

D: In the WIP, tag the key recommendations/action that would make the greatest improvement in each catchment area.

D: PT to add recommendation about GW ensuring that aquifer water quality is maintained for the Committee to review.

D: Include longer term progression beyond generational change with columns in the target state tables for second and third generation to show the pathway to A state.

D: Need to communicate to the public the reason for target states not changing between short term and generational change.

A: PT to check with Mark and Brent whether the removal of copper brake pads (as recommended by the Committee lobbying central government) would change the target state for copper to B or A in a generation.

A: Mark and Brent to check the Parangarahu Lakes table to see if invasive species is the correct heading rather than MCI, and provide further commentary around extra effort required for improvement.

WIP feedback and process for review

A: PT to combine feedback from the Committee and editor in the Draft WIP. Mike to work on cross referencing between TMW and the WIP.

A: PT to send the Committee the updated “Managing Ourselves” section of the WIP by the end of Tuesday 27 July, which includes most of the completed recommendations.

A: Committee to review the “Managing Ourselves” section of the WIP at the next meeting on Monday 2 August and the restructured front section if completed.

A: Committee to provide feedback on the draft place-based template format drafted by Ros.

A: PT to add all place-based information into the draft WIP.

D: Draft WIP recommendations to be clearly shown with their current wording agreed by the Committee and an alternate version suggested by the editor. Editor to only make changes to recommendations that improve readability with a plain English lens, changing the structure but not the content.

Finalising recommendations

D: Recommendation 84 on water tanks – keep word “require” rather than “promote,” and PT to draft wording that explains the reason for a dissenting opinion within the Committee.

D: Recommendation on councils leading by example – include contaminated land along with forestry, farms, parks, etc. rather than directing councils to start remediating contaminated sites on public land first.

A: Sam to share concept for water warriors recommendation for PT to create a draft recommendation.

A: PT to write draft recommendations for supporting TKT's direction that requires mana whenua involvement in management and decision-making, and referencing the mahinga kai framework in TMW.