

## BRIEFING NOTES – PLAN CHANGE 6 TO THE HAWKES BAY REGIONAL RESOURCE MANAGEMENT PLAN (TUKITUKI CATCHMENT) AND RUATANIWHA WATER STORAGE SCHEME (RWSS)

### Plan Change 6 – Tukituki Catchment

The Hawkes Bay Regional Council (HBRC) notified Plan Change 6 to the Regional Plan for the Tukituki Catchment, this was subsequently referred to the EPA and has now been called in and will be considered by a Board of Inquiry (BOI). The same BOI will also consider resource consents lodged by the Hawkes Bay Regional Investment Company to construct a 90 million cubic metres storage reservoir to supply a community irrigation scheme to irrigate (and intensively manage) approximately 25,000 hectares of land, known as the Ruataniwha Water Storage Scheme (RWSS).

The key current land and water management issues for the Catchment are –

- Excessive periphyton growths affecting recreational, amenity and freshwater values
- Low flow conditions affecting fishery values.
- Increased demand for water for irrigation.

### Approach to Water Quality management in PC 6

- Controlling periphyton growth as a key indicator of freshwater health. Periphyton growth is influenced by both Nitrogen (N) and Phosphorous (P).
- The Plan change proposes managing only P on the basis that most of the lower catchment in the “main stems” is P limited. The plan change allows significant increases to N levels, following research undertaken by NIWA relating to the toxicity levels of N and fish tolerance.
- N limits proposed are much higher (c.f. 300-500%) than the current ANZECC Guidelines for chronic toxicity.
- Farm management practices are then approached on the basis that existing uses are “grand parented” but any increases in leaching rates (to the newly revised N toxicity levels and maintaining P at 2013 levels) as a result of land use intensification will be subject to the consent process.
- The Plan Change proposes higher minimum flows.

### Values of Tukituki Catchment

- The Tukituki Catchment contains 18 native fish species, 8 are considered to be “At Risk” and declining according to the current national threat classification. The diversity of native fish found in the Tukituki catchment is relatively high and the non-migratory dwarf galaxias is found in only one other catchment on eastern side of the Ruahines.
- Tukituki catchment was one of four catchments that were ranked as being nationally significant in the RIVAS (Rivers Values Assessment

System) of native fish values in the Hawkes Bay Region. It scored 2<sup>nd</sup> equal highest in the assessment and was identified as a stronghold catchment for inanga, lamprey, koaro and dwarf galaxias.

- The Tukituki Estuary also been classified as being of national importance for fisheries. Numerous threatened and at risk species use the estuary e.g. white heron, bittern, spotless crane, it provides habitat for a number of scarce and rare insect species (e.g. gossamer damselfly). Significant plant species are present including glasswort, shore primrose and arrow grass. It is a Recommended Area for Protection (RAP) under the department's Protected Natural Areas Program because of its ecological and biodiversity values

### **DOC position on the plan change**

- DOC supports the increase in minimum flows to be achieved through the plan change.
- DOC does not oppose in principle the approach of managing periphyton growth as an environmental indicator to protect freshwater values;
- DOC does not oppose in principle the management of periphyton biomass by managing one nutrient where this is shown to be the limiting nutrient, provided sufficient management tools are available to monitor and review the success of this reasonably new approach and if adverse effects become evident there is the ability through the regulatory process to respond and if necessary reverse any adverse effects in a timely manner.

However there are a number of risks associated with the approach adopted by Plan Change 6. These risks/concerns are:

- The reliance on Phosphorous being the controlling nutrient in periphyton growth for all waterbodies in the catchment as supporting information with the plan change indicates that some sub-catchments are co-limited or Nitrogen limited. The "blanket approach" of the management of P may therefore not be sufficient to provide for the life supporting capacity of freshwater in tributaries where periphyton growth is N limited or N/P co-limited, the result being that algae blooms could be more evident in the tributaries.
- How the HBRC manages and responds to any changes in periphyton species composition that may result from increases in N concentrations. For example the mechanisms leading to excess growth of toxic periphyton (e.g. *Phormidium* sp.) are not well understood and there is some evidence that limiting nitrogen is important as this species may be able to utilise Phosphorus from entrained sediment.
- The Nitrate toxicity research is laboratory based, utilising only a small suite of species, there is a risk of uncertain environmental outcomes when this is applied in the real world, particularly when applied to an

entire catchment and particularly where other stressors also come into play, for example water temperature, predation risk, foraging, dissolved oxygen levels – all of which are generally at their greatest during low flows/peak irrigation demand.

- N toxicity testing has not have been undertaken on the most vulnerable native species within the catchment and therefore there is some doubt that the revised N limits will be able to safeguard the life supporting capacity of the water bodies in the Tukituki Catchment for key taxa.
- Potential effect of changes to nutrient discharge levels on coastal values, including the Tukituki Estuary, and effects on wetlands and lakes, especially Lake Hatuma. The plan change is silent on these matters.
- The ability to reverse the problem should adverse effects become evident – i.e. how quickly they can achieve a reduction in the output of nutrients from farm practices.
- The ability for the regulatory process to respond to the lag time for nutrients to reach the rivers and the accuracy of nutrient modelling to simulate this lag process.
- The massive (up to c.500%) increase on N from current levels could have unexpected ecological effects if it occurs rapidly.
- While nutrient limits have been set, and these may reflect the success of land use practices on periphyton growth (also a limit), there are no triggers/limits/targets (e.g. MCI, fish populations, etc.) which assess the effectiveness of the limits in improving or maintaining ecosystem health and lead to actions if an issue becomes apparent that was not previously identified or investigated.
- Reliance on “industry best practice” to reduce and manage P and N sources. These practices are not defined and are to be introduced later. Similarly the plan change does not set nutrient loading or leaching rates at this stage – these are to be introduced at various stages between now and 2020, it is therefore not possible to assess the effectiveness of these methods to achieve the objectives in the plan.
- Provisions for fencing of waterways are complicated, will be difficult to enforce and may not be effective in reducing P contributions to waterbodies.

#### Ministry of Primary Industries

We have consulted with our colleagues at MPI who have advised that they have similar concerns and intend to lodge a submission, in summary their concerns are:

- the adequacy of P management provisions to ensure periphyton control
- lack of definition of industry best practice
- use of OVERSEER
- some concerns regarding the economics of the Dam.

### Other Considerations

- MfE are currently finalising a first round of amendments to the NPS Freshwater Management including the setting of a National Objectives Framework (NOF) and national bottom lines. MOC to be briefed shortly.
- Sets a framework for guiding Councils in setting objectives and standards for attributes of waterbodies with four bands for each attribute from as close to natural state being the A Band to lowest condition being the D band.
- It is anticipated that the N toxicity levels in the NOF will adopt the work undertaken by NIWA through this plan change, however a fundamental difference is that N may need to be managed to lower concentrations for other purposes (e.g. to control periphyton) and that there will be more than one value that will be set to achieve each Band which could also influence land management and discharges.

### Recommendation

There are potential precedent effects from the approach to water management in PC 6. It is recommended that the Director General lodge a submission on the plan change seeking that:

- the BOI consider and obtain further advice on the robustness of the approach to water quality management, preferably obtaining independent advice on the effectiveness of approach in the plan as this approach has the potential to be replicated in other catchments nationwide, and
- safeguards are built into the regional plan to ensure that the risks/effects noted above can be effectively managed and addressed.

### Risks

The outcome of any changes to the approach to water quality management and nutrient management may impact on the amount of land that can be intensified and therefore the economic viability of the dam.

### **DOC position on the RWSS Irrigation Dam**

The following approvals from the MOC and DG are needed:

- A Concession has been sought for the inundation of 23 ha DOC land in the Ruahine Forest Park. Initial assessments suggest that it is unlikely that the concession could be recommended to be approved. At this stage the department's advice to HBRIC is that a land exchange under

s16A Conservation Act would be preferable. HBRC are currently identifying appropriate land. We understand that the council has high value land available approximately twice the size of the 22ha of DOC land needed for inundation, as part of a property it is purchasing for the dam. The Concession application is currently on hold but HBRC may still pursue the concession.

- As the dam will block fish passage, an application to the Director-General under the Freshwater Fisheries Regulations will be required.

#### DOC Position on the RWSS –

- The effects arising from the construction of the dam can be adequately addressed through conditions on the resource consents (but current form of conditions needs work).
- The increased minimum flows and the ability to provide environmental flushing flows associated with the dam are supported.
- If the approach of water quality management in PC 6 is adopted it is recommended that a cautious and adaptive approach to increasing nutrient (N) levels is provided for in the consents until the effects of the significant increase in N concentrations and the success of P reduction in reducing periphyton blooms can be assessed.
- The effects arising from the discharge of contaminants associated with land use intensification hinge on the provisions in the plan change and (depending on the final limits set) may have some bearing on the amount of land that may be intensified.
- In general less concern regarding the dam construction but the final framework for water management in both the plan change and for the consents will impact on the economic viability of the dam.
- The 'Biodiversity Offset' package is not based on an agreed methodology (in fact no methodology at all has been used) and is unlikely to result in a No Net Loss situation; however there has been some verbal acceptance of the package by departmental officials.

#### Recommendation

- A neutral submission be lodged, seeking that the BOI firstly consider the water management framework in the plan change and the impact on the RWSS consents before considering the consents (King Salmon High Court appeals also raised the matter of dealing with plan changes concurrently with consents).
- Seek amendments to conditions to ensure sound management of effects.

