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I do wish to be heard in support of my submission; and if so, I would be prepared to consider presenting my submission in a joint case with others making a similar submission at any hearing.

Entering into this process is very time-consuming, especially for small businesses with no staff.

I could gain an advantage in trade competition through this submission.

Signature Note: 1 August 2016

Submission approach and overview to page 21

My submission is structured as per the plan, with first a general overview and comments to page 21, then Objectives and Rules in that order. I will state at the start of each Rule whether I support, oppose, seek amendment or provide comment. I can be contacted for further information.

Innovation, rapid change and reviews to the Plan

How enabling of innovation is the new plan? Does it allow response to rapid change? I am concerned that with so much impending and disruptive change – climactic and technological - that a minimal standards approach locked into a 10-15 year plan will stifle innovation and farming survivability.

Limits versus targets

The plan has too much focus on minimums, thresholds and limits rather than targets and goals. Why not incentivise environmental performance by setting targets backed by e.g. rates relief; consent fees relief, positive farmer publicity etc? We are supposed to be a competitive society; let's tap into that and make real progress for stream health.

Phosphate

It is time to start using phosphate detection methods that detect more phosphate (there are at least 16 test methods¹; Olsen is optimised for superphosphate and thus detects only a fraction of total phosphate). Phosphate is a very finite resource and represents a hard limit for farming – it is more valuable than gold.

Maps and Plan readability

The maps are very difficult to use; gridding sheets, plus legal lot lines and adding road names would make it easier to see where one is. This blank-map approach makes land users dependent on council and/or consultants. Also pdfs are pretty intelligent now with layer visibility controls and the ability to add comments to maps and pass them around – time to start using some of this technology.

Reading the document would be faster if there was a page header showing whether it was an Objective, Policy, Rule or Appendix. Further, if Objectives, Policies and Rules were consistently numbered thorough the text (and other documents especially the Section 32 analysis) the plan could be rapidly comprehended and council's chain of reasoning followed by all.

Jargon, specialist and 'in house' language is a barrier to understanding e.g.: Substituting Mean Annual Low Flow with Q95 doesn't seem to improve reader understanding.

There are a several instances where articles are referenced with a number but there is no reference cited at the end of the plan.

Setbacks

Three width controls are better than one but this is still a very blunt instrument and one which will have little real effect except removing valuable land from production.

¹ Neyroud J., & Lishcer P. 2003. Do different methods used to estimate soil phosphorus availability across Europe give comparable results? Journal of Plant Nutrition and Soil Science, Volume 166, Issue 4, pages 422-431.

What is needed is the clearly stated option to choose between this approach and a site-specific solution. For instance, variable-width setback designs tailored to soil, climate and crop/s.

Several approaches exist to carry this out ranging from fully manual, field methods based on simple proven rules-of-thumb through to various levels of digital mapping (GIS) which are semi-automated.

There are a number of cases from pasture, field crops and forestry, where when a variable width buffer approach was applied, land taken up in buffer area was 30 to 50% less than with a fixed width approach. These approaches also provide known pollutant trapping rates and higher levels of mitigation than with fixed-width solutions.²

Human waste - composting septic systems

Focus on wastewater needs to shift away from traditional septic systems to composting and other self-contained human waste systems – these have no impact on natural systems as they have no ground emissions. Will you implement changes that allow this? This is not rocket science and is straight-forward in many European and American states.

Chemicals not from agrichemical sources

Phthalates (plastic softeners as used in agricultural wrapping – which are proven hormone mimics) are missing from the agrichemical control list.

Arsenic leaching from treated timber fenceposts is another widespread problem – this is a recognised issue in several parts of NZ e.g. Marlborough wine country where leachates have been shown to restrict soil microbial processes³.

Objectives

There are far too many objectives and much duplication / overlap and indirect language. A number of objectives could be folded into one e.g. 1+2, 3-5. Land owners and consultants are very busy people and this plan requires far too much reading.

Each objective that I address is listed below with comment below each. I have reworded some objectives in order to understand them; some are far too convoluted and it is hard to discern what they really mean.

There is an over-reliance on using the RMA as the baseline, whereas the RMA can only ever take a very broad-brush approach to any action.

<u>Objective 7 Any further over-allocation of freshwater (water quality and quantity) is avoided</u> and existing over-allocation is phased out in in accordance with timeframes...

Oppose

Over-allocation should be stopped immediately it is known. If a farm is monitoring their take overallocation would not occur. Over-allocations are after all a loan from an already proven depleted

² Dosskey, M.G., Helmers, M.J., Eisenhauer, D.E. 2011. A design aid for sizing filter strips using buffer area ratio. Journal of soil and water conservation, Jam/Feb, 66, 1, 29-39.

³ Robinson B, Greven M, Green S, Sivakumaran S, Davidson P and Clothier B. 2006. Leaching of copper, chromium and arsenic from treated vineyard posts in Marlborough, NZ. Science of the Total Environment 364 - 113 – 123.

resource. To delay action in over-allocation instances is a disincentive to obey the law.

Objective 8 that:

(a) The quality of water in aquifers that meet both the Drinking-Water Standards for New Zealand 2005 (revised 2008) and any freshwater objectives, including for connected surface water bodies, established under Freshwater Management Unit processes is maintained; and (b) The quality of water in aquifers that have been degraded by land use and discharge activities (with the exception of those aquifers where ambient water quality is naturally less than the Drinking-Water Standards for New Zealand 2005 (revised 2008)) is improved.

Amend

This section is extremely vague. Where standards are cited / mentioned an outline of the standards should be published here so we don't have to read (or buy) yet another document! It needs to be borne in mind that NZ Standards are very costly – an example of closed / restricted information.

Objective 11 states that: Water is allocated and used efficiently.

Comment

What about low flows and climate-event response flows and planning for such events.

I contacted Environment Southland in 2016 about the development of a rational method to decide on allocations for irrigation especially in highly-allocated areas. I have never heard back but water allocation (in some physiographic zones) should be based on a meaningful metric such as added market value, or protein content – there has to be some rational way of valuing water and adding environmental protection. For instance irrigating in zones with severe water deficits or porous soils is wasteful. This could also be a robust method where controls could be introduced to sensitive (e.g. high P loss) catchments

<u>Objective 12 states that: Groundwater levels, and minimum surface water flows where these</u> are derived from groundwater, are maintained.

Comment

Is the monitoring network dense enough to realistically model GW levels within ranges that will protect key catchment metrics?

Objective 17 states that: The natural character values of wetlands, rivers and lakes including channel form, bed rapids, seasonably variable flows and natural habitats, are protected from inappropriate use and development

Amend

These attributes of freshwater bodies should not be all lumped together. Some of these habitats are also very rare / unique where others may be more common, e.g. vernal pools / seasonally variable wetlands – also many small and narrow features are missed in state-sector databases.

Objective 18 states that: All activities operate at 'good (environmental) management practice' or better to optimise efficient resource use and protect the region's land, soils, and water from quality and quantity degradation.

Amend

Use 'best management practice', as it is a recognised term common to environmental science culture and scientific literature. Best is a term about quality whereas 'good' is meaningless in this context.

RULES

Rule 25 cultivation on sloping ground

Amend

Rule needs to allow for innovations including lightweight autonomous ground vehicles and drones which would be expected to have very low land impact – Council must realise that removing an area from production represents a permanent loss to a farm; hard rules make innovation impossible.

Rule 74 – wetlands

Comment

Protected wetlands need to have a management buffers to ensure they do not become dewatered, especially from drainage activities.

Rule 76 Vegetation planting

Comment and Amend

Innovation is occurring in this area which will change how riparian schemes are designed from fencing design (including whether fences are used at all viz, radio-fences, drones and other rapidly emerging technologies) to vegetation cover to maintenance.

Some level of production needs to enabled for riparian networks as this document, if applied, will mean losses of large areas of the farm from productive use.

'Production forestry' requires a definition here as some harvest or vegetation removal from these systems will be necessary, and where farmers work out low-impact land management methods and techniques these should be allowed to work this land.

Appendix F - Mataura River

Support

This is well-worded and (at least without a deep reading) appears direct – it would be ideal if this was the approach taken with all of Southland's waterbodies.

Appendix L.2 stream depletion effects

There is too much reliance on models here, rather than real (or even just daily) time monitoring of water levels (which is becoming simpler all the time), this regime could easily lead to a dry bed.

waterbodies characterised as ephemeral will be excluded from consideration of stream depletion effects;

Oppose / Amend

Ephemeral streams in many catchments represent a greater stream length than flowing waters. By not targeting ephemeral streams significant levels of target pollutants will be missed and flow on to pollute freshwater bodies and the ocean. By including ephemeral streams allows them to be considered by innovative farmers with their results leading to benefit for all farmers and our streams.

stream depletion effects due to groundwater abstraction should not result in a more than minor effect on the frequency, extent and duration of flow loss in intermittent waterbodies;

Amend

There appears to be no mention of baseline studies to determine natural stream height ranges.

Who decides on what 'minor' means? 'minor' needs a scientific definition.

How responsive will any controls be to climatic extremes?

Will there be a way to control takes during climate events?

Once a river has been killed, they tend to be hard to bring back to life.