

BEFORE COMMISSIONERS APPOINTED
BY THE WAIKATO REGIONAL COUNCIL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the First Schedule to the Act

AND

IN THE MATTER of Waikato Regional Plan Change 1- Waikato
and Waipā River Catchments and Variation 1
to Plan Change 1

AND

IN THE MATTER of submissions under clause 6 First Schedule

BY JAMES GORDON LIVINGSTON REEVES AND AMY
LOUISE TAYLOR
Submitter

STATEMENT OF EVIDENCE OF JAMES GORDON LIVINGSTON REEVES –
BLOCK 2

3 May 2019

1. My name is James Reeves, and firstly on behalf of myself and my partner Amy Taylor, we wish to thank you again for the opportunity to come before you and, in this instance, present our Evidence on the Block 2 hearings topics for Plan Change 1.
2. Before we directly address the topics, we would like to make a brief comment. The Section 42A Analysis for Block 2, particularly given the huge amount of change contained within the *Officer's Block 2 "Tracked Changes" Recommendations* from the original version, has effectively meant we have been required to review and comment on virtually a new plan – even if the thrust of the two documents is similar. Given that presumably this version now represents the WRC's preferred version of PC1, and with only a month between this version appearing and the requirement to provide our evidence, like most individual submitters this has meant a huge strain on our time resources to try and understand the import of these changes and then prepare for this Hearing.
3. As a general comment on the amended Policies and Rules, to us it appears as if the rules and policies have been written ahead of the knowledge of who is doing what in the catchment. It's focus is clearly on pastoral land use, and for reasons we address in the body of our Evidence, it does appear as though the highest average emitters of contaminants to the Waikato and Waipa river catchments will have far less onerous Rules to meet than others who have much lighter impacts upon water quality in the catchment.
4. Our submission here is not so much about the policies and rules in and of themselves. Rather, we wanted to take a step back and ask whether the Rules and Policies meet the Vision & Strategy Objectives, and whether they meet the principles that underpin the V&S - are the Policies and Rules fair, equitable and proportional to the impacts we individually and collectively currently have on water quality, and on the expected water quality impacts of the proposed Policies and Rules. We are concerned that his entire Hearings process risks getting mired in the minutiae of where commas and fullstops go, and that all of us, from the Hearings Commissioners to the s42 authors to every submitter, is running the very real risk of failing to see the forest for the trees.
5. It is worth re-iterating the Objectives of the Vision and Strategy. The Policies and Rules of Plan Change 1 are meant to give effect to these Objectives. In order, these are:
 - Objective 1 is long term restoration and protection of water quality
 - Objective 2 is social, economic and cultural wellbeing is maintained in the long term
 - Objective 3 is short term improvements in water quality in the first stage of restoration
 - Objective 4 is people and community resilience
 - Objective 5 is Mana tangata – protecting and restoring tangata whenua values
 - Objective 6 is Whangamarino wetland

6. Proportionality, equitability, and effectiveness are the key principles underlying PC1, and the achievement of the Vision and Strategy. Polluters should pay in proportion to the amount of contaminants they add to the system. Further, polluters should reduce and mitigate in proportion to the amount of contaminants they add to the river systems. The question must therefore be asked: Will the Policies and Rules, as defined in PC1, achieve not just the Objectives of the Vision and Strategy, but also meet the key principles that underpin it?
7. As we pointed out in our initial submission and evidence submitted for the Block 1 Hearings, one of the key problems of this entire process is that we have not been made aware of the total size of the contaminant bucket, nor the proportion that each sector contributes to this bucket (with the exception of point source discharges, and even then only two of the four targeted contaminants), nor by how much this bucket needs to reduce in order to achieve the desired water quality objectives of Table 3.11-1. This is critical information if we are to properly assess how effective, equitable and proportional the proposed Policies and Rules will be. In their absence, we can only make judgements informed by what information the WRC (and others) have made available.
8. We cannot overstate enough just how critical this information is. One of the common threads of a large number of submissions, as per the S42 Report, is that some agricultural sectors are being treated “unfairly”. In particular one can make the generalisation that the sheep and beef sector believe the rules will mean the largest impost on them, and yet the anecdotal evidence would suggest the average sheep and beef farm is not a major source of contaminants. On the surface, the rules do appear to unfairly target this sector. As the rules are currently written, set-up costs on the average individual sheep and beef farm will far outweigh those in the rest of the agricultural sector, yet the potential improvements in water quality may not be great. The point is, we still simply have not been made privy to the information that would allow us to make a truly subjective judgement on this issue.
9. Will the Policies and Rules, as currently written, achieve improvements in water quality in the Waikato catchment and so meet Objective 3 of the Vision and Strategy, and begin the process of meeting Objective 1? We believe the answer to this is in the affirmative. Will the Policies and Rules, as currently written, achieve these improvements while also meeting the other 4 Objectives, and will they give effect to the key principles that underlie the whole Vision and Strategy for the Waikato and Waipa rivers? No, we believe they will not.
10. Spending \$1000 to achieve a 1kg reduction in sediment loading on one farm producing 10kg/ha of a contaminant makes no sense if for \$10 we can achieve a 1kg reduction on a farm producing 10kg/ha down the road. Similarly, spending \$1000 to achieve a 1kg/ha reduction in one contaminant makes no sense if we can spend \$1000 and achieve a 10kg/ha reduction down the road. Finally, spending \$1000 to achieve a 1kg/ha reduction in one contaminant on a property that only produces 10kg/ha of this contaminant makes no sense if the property down the road also spends \$1000 to achieve a 1kg/ha reduction but this property produces 100kg/ha of this contaminant. This should have been the driver for deciding on the policy mix.

11. We cannot truly know whether the policy mix is, in fact, proportional or equitable, which makes commenting on the Policies and Rules problematic and subjective. Where was the study that investigated how the bucket of contaminants was made up, followed by an assessment of the various mitigation options, costs, and outcomes? Without this, policymakers have had to frame and then amend rules effectively not knowing whether these will achieve both the principles underlying HRWO, and the principles underlying this Plan Change.
12. The Hearing Commissioners, let alone the general public, have not been given the information we need in order to produce objective decisions. PC1 should have included the relative impacts of all groups and land usages on the catchment, and we believe the Policies and Rules contained in PC1 should have applied equally to all land usages, in order to assure the community that the principles of “polluter pays in proportion to their relative levels of pollution” is, in fact, being delivered. The health and wellbeing of the river cannot afford certain land usages or “regionally significant” industry or infrastructure with high emissions of contaminants to be allowed to play by different rules.
13. Until we have the full picture – until we are aware how much each land use (and enterprise) contributes to the contaminant buckets, we cannot be truly objective. And if we cannot be objective we will not make optimal decisions, for ourselves, for our grandchildren, and for the health of the Waikato and Waipa river.

15. Diffuse discharge management

16. *“There is considerable uncertainty in the model which reflects the difficulty in determining E.coli loads largely due to the high spatial and temporal variability of E.coli concentration measurements...There are few studies that have assessed the effectiveness of the mitigations listed. Muirhead (2015) suggests that mitigation is challenging because there is little information on E.coli losses at the farm scale.”¹*
17. The above comment comes from a study undertaken by the WRC that attempted to develop a model to understand E.coli losses at a sub-catchment level. Effective mitigation is not just about simply mitigating contaminants. The critical point is understanding what mitigation offers what response – and then choosing the mitigation that gives the most effective response desired for the monies invested. To do this, the Policies and Rules must be based on the outcomes they achieve, not based on inputs. To do otherwise risks losing sight of what we are trying to achieve, and therefore also risks both poor investment of scarce resources, and less than optimal outcomes.
18. As an example, a report conducted for the Technical Leaders Group about faecal pollution of waterways concluded: “Rainfall driven overland flow from dairy farms has been identified as the largest pathway of faecal microbial losses from agricultural catchments.”² This is reinforced by a 2006 study showing waterway E.coli loadings from direct deposition into Waikato streams are 5×10^9 E.coli/ha-pasture/yr, versus 1×10^{11} E.coli/ha-pasture/yr for surface run-off.³ In other words, surface run-off provides a whole one-and-a-half orders of magnitude more microbial pathogens than that provided by unfenced waterways.
19. Furthermore, given the large percentage of waterways already fenced off by the dairy sector, this immediately suggests that whereas stream fencing (and doing other mitigations such as providing crossing points) reduces microbial levels in waterways, other forms of mitigation may be more effective, both on dairy farms and others.
20. In WRC Technical Report 2018/62, *Modelling E.coli in the Waikato and Waipa River Catchments – Development of a catchment-scale microbial model*, Table A-1 in Appendix A states that stock exclusion from waterways will remove 20-35% of the E.coli. At the same time this form of mitigation is expected to remove a high amount of P entering waterways, to remove a low amount of sediment, and not remove any N. By contrast, a constructed wetland (or a wetland from which stock is excluded, for that matter), is expected to remove

¹ Annette Semadeni-Davies, Sandy Elliott, Sharleen Yaldon, *Modelling E.coli in the Waikato and Waipa River Catchments – Development of a catchment-scale microbial model*, WRC Technical Report 2018/62, 2018, Appendix B, p27.

² Elaine Moriarty, *Sources of Faecal pollution in Selected Waikato Rivers*, Institute of Environmental Science and Research Ltd., Report No: HR/TLG/2015-2016/7.3, p3.

³ B Wilcock, *Assessing the Relative Importance of Faecal Pollution Sources in Rural Catchments*, Report prepared for Environment Waikato, NIWA client report: AHM2006-104, Fig. 3.2, p23.

80% of E.coli, while at the same time also achieving a high amount of N, a high amount of sediment, and a medium amount of P.⁴

21. Thus, by this reckoning, if we want to achieve the optimal outcome for each dollar spent, rather than demanding stock exclusion of all waterways, we should instead be demanding that wetlands are constructed (if they don't already exist) wherever possible but ideally immediately prior to where small waterways entering large water-bodies, and that stock are excluded from these. Not only will this achieve better contaminant-reduction outcomes, but may prove a far more cost-effective for some farmers.
22. Note that the existing regional plan already has stock exclusion rules for high priority catchments (Rules 4.3.5.4 – 4.3.5.6). If the rationale for the rule applied catchment-wide is to ensure reductions in contaminant discharge, then where and what water bodies will be required to be fenced is already covered in the Farm Environment Plan Schedule, which requires a full risk assessment, with appropriate mitigations. Regardless of slope, if other, equally or more useful mitigations are available, then this should be enabled under the Rules, not discouraged. The s32 Evaluation Report even said as much when it noted:
“Diffuse discharges of sediment, nutrients and microbial contaminants can be reduced at their source (for instance by management practices that keep soil on hill slopes) or captured (for instance by mitigation practices that trap and hold sediment that has been washed off slopes before it enters streams). Ideally and model or measure will take account of both of these ways to reduce contaminants.”⁵
23. The key point is rather than dictate what mitigation farmers must use, as is the case with the stock exclusion rule, we should focus the rule on the outcome we desire and then work out what method best suits – this is what taking a tailored approach actually means. In the same way, detention and (in particular) retention dams are a proven effective method of sediment removal, and may be far more effective and economic than stock exclusion. By requiring stock exclusion though, we effectively remove this mitigation from the average sheep and beef farmer's toolbox.
24. Why is this the case? A study has been done (but was not widely disseminated prior to initial submissions being due) on the cost of implementing the various mitigation options, with these varying wildly from farm to farm, dependent on topography, size, and stock classes utilised. The average implementation cost for sheep and beef farms was \$138000, while for dairy farms this was \$41000 – with virtually all of the costs on sheep and beef farms associated with fencing all waterways and providing water reticulation. However, some farms will have to spend upwards of \$250000 (and some potentially more than \$750000)

⁴ *Modelling E.coli in the Waikato and Waipa River Catchments – Development of a catchment-scale microbial model*, WRC Technical Report 2018/62, Table A-1, Appendix A.

⁵ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments: Section 32 Evaluation Report*, September 2016, p137.

under planned rules.⁶ To put this into perspective, sheep and beef farm income over the past 25 years, and after taking 2004-05 as the base year and adjusting for inflation were⁷:

- 1990s average = \$44800
- 2000s average = \$65100
- 2010s average = \$88200

25. The average sheep and beef farm will be required, under current rules, to spend the equivalent of one and a half years of profits – upfront and as a sunk cost – to achieve an uncertain outcome. Expecting this sector to make this up-front investment will effectively prevent other, potentially more effective mitigations to be put in place simply because the money required will not be available. We know that stock exclusion will improve water quality, but we don't know by how much because that data has not been provided, and we also have no idea whether this will be in proportion to the amount of contaminants produced. However, we can expect that, because stream fencing is not as effective as wetlands, and because dairy farm surface run-off is the largest source of E.coli contamination in the catchment, that this impact will not be as large as it could otherwise have been for the dollars that will need to be spent, if the rules had targeted E.coli reduction – the outcome – rather than stock exclusion – the input.
26. The rules will thus require a huge spend from the average sheep and beef farmer, without any real idea of:
- How much of each contaminant the average sheep and beef farm adds to the contaminant bucket; and
 - What the actual water quality impact will be; and
 - Whether this is proportional and equitable.
27. To put this into true perspective, what would be the water quality impacts if we asked the average dairy farmer to invest a similar one and a half years average income on mitigation? If we asked all urban dwellers to devote one and a half times their yearly income, what would be the impact on water quality? Is it proportional, equitable, and efficient that we are asking this level of investment of sheep and beef farmers, but of no other sector in the Waikato catchment? We believe the answer to this question is a resounding no, but this is what the rules currently demand.
28. The key point here is the S32 analysis did not actually assess the efficiency of the proposed rules against the desired objectives, and then choose the most appropriate from the different policy options. The most appropriate mitigation actions are those that will be water quality-effective and cost-effective, both socially and economically. We are left with a situation where we are being asked to put in place Policies and Rules that may or may not achieve the Objectives of the Vision and Strategy, and whose costs we believe will fall disproportionately on one sector of the Waikato Catchment.

⁶ *Farm Environment Plan Project*, Report to Waikato Federated Farmers prepared by Phil Journeaux of AgFirst Waikato, 4 November 2016, p5.

⁷ <http://www.beeflambnz.com/news-events/media-releases/2016/march/sheep-and-beef-farm-profits/>

29. We made the point in our Block 1 evidence that we need to understand the size of the contaminant bucket and how much everyone contributes – else how can we be assured that the polluters are paying in relation to the amount they are polluting. The policies and rules should have been framed after this data was calculated to ensure proportionality and equitability. As things stand, the key criteria identified by the WRC that were meant to be used when assessing the Policies and Rules - the level of equity and the fair distribution of impacts – have effectively been ignored in the development of the Policies and Rules - and also, for that matter, in the two Section 42A reports that have thus far been conducted by the WRC for this Hearings process.

30. *“Baseline loads of each contaminant vary by sub-catchment and FMU [Freshwater Management Unit]. Cost-effective mitigation relies on implementing diverse mitigation strategies to differing degrees for different contaminants across space.”⁸*

31. The intent of taking a staged approach to water quality improvements recognises there is a need to move forward with some caution in light of gaps in current knowledge. The S32 report acknowledged this was so, but despite the clear paucity of data as to the efficiency and cost-effectiveness that a policy such as fencing off small streams and drains on steeper hill country will have on water quality outcomes, but clear knowledge that this would be an expensive proposition for many hill country farmers, this is the only hard-and-fast rule that has been selected. Little or no assessment of the viability and effectiveness of other options was considered, and certainly not framed in the Policies and Rules.

32. Proportionality, equitability, and effectiveness of Policies and Rules

33. The mitigation costs that will be incurred by individuals are inequitable when one considers the likely impact these will potentially have on individual enterprises relative to one another, and then the likely impact of that spend on contaminant loads. Average sheep and beef farms are much larger than average dairy properties, so the costs of mitigation will be subsequently larger. However, less intensive farming practices, and less polluting stock classes such as sheep mean in general less discharges of contaminants from these properties. Thus, while the ceiling for possible contaminant reduction is not as high as for other land uses, the costs of applying mitigation techniques will be higher, so on sheep and beef farms a much higher cost per unit of contaminant reduced will apply. How is this equitable or proportional?

34. In effect this means there will not be an equivalent level of effort undertaken to reduce contaminant loads. In reference to nitrogen reductions, the S32 analysis said: *“this principle of proportionality is evident in the policy requiring reductions to be commensurate to the current degree of discharge (that is, those discharging more must make greater*

⁸ Graeme Doole, Sandy Elliott, and Garry McDonald, *Evaluation of scenarios for water-quality improvement in the Waikato and Waipa River catchments*, Healthy Rivers Wai Ora Report No: HR/TLG/2015-2016/4.2, p57.

reductions).⁹ But the rules are not currently set out in a manner that encourages proportionality. In our opinion the only Policy that attempts to address the issue of proportionality is Policy 1(b1) requiring those above the 75th percentile N leaching to come down below the 75th percentile level.

35. We stated in our earlier Block 1 Evidence that it is our belief all land uses and enterprises should have the rules of Plan Change 1 applied to them equally. We used as the example point source discharges, which page 60 of the Section 32 report stated are estimated to contribute about 7 per cent of the nitrogen and 18 per cent of the phosphorus to total catchment loads.¹⁰ Yet depending on which report is read, only 2-3% of the entire catchment is considered as point sources, so on a per hectare basis these land uses contribute 250-350% more of the nitrogen load, and 600-900% more than the average hectare (effectively the measurement that has been chosen for PC1's NRP) in the catchment. Remember too, that a large proportion of point source pollutants are not even measured (those that flow through urban stormwater systems) so those figures actually understate their impacts on the river system. To put it another way, to ensure proportionality and equitability, then shouldn't all enterprises be allowed to pollute, on a per hectare basis, up to this level that point sources discharge at?
36. The argument is made against this that many of these are "regionally significant industries" or "regionally significant infrastructure", and so Policy 10 states we must provide for their continued operation, providing certainty for these enterprises. Policy 11 specifically allows these industries the ability to off-set their adverse effects. The argument is also made that these industries or infrastructure have already made significant reductions in their individual contaminant levels, and so in Policy 12 we must take into account past upgrades and potentially allow future upgrades to be staged over time. Policy 13 states we need to consider the magnitude and significance of the investment being made when considering the consent duration.
37. Why are entities that are already among the largest sources of contaminants to the river catchments being given advantages that others are not? Why should they receive certainty that their operations will continue, while the pastoral sector does not? Why are high polluters able to off-set their adverse effects, yet this is not offered to individual farmers or collective farmer groups? Forgetting for a moment that point sources are still high polluters, why must we have regard for past upgrades that have lowered contaminant levels only from point sources, when individual and collective actions on farm have also done the same? Why are they potentially allowed to stage future upgrades over time, with this timeframe undefined, when farmers, particularly in Priority 1 catchments, have not been allowed the same luxury? Why are individual farmers that make investments in mitigation that would likely dwarf, on a proportional scale, those planned by point sources, not been afforded the same considerations in terms of consent duration?

⁹ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments: Section 32 Evaluation Report September 2016*, p164.

¹⁰ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments: Section 32 Evaluation Report September 2016*, p60.

38. The s42 Block 1 Report, at p400 recommends Objective 3 is changed to read: “Actions put in place and implemented by 2026 to reduce diffuse and point source discharges... are sufficient to achieve the short-term water quality attribute states in Table 3.11-1.”¹¹ Despite this, no coherent Policy or Rule exists in the Block 2 S42A Report that would mean point source dischargers have to take any action to achieve this Objective. How is it that these high polluting enterprises can simply continue on as they are?
39. Meanwhile, commercial vegetable production is also to be treated differently via Policy 3 – presumably because it is deemed a regionally/nationally significant industry? This despite the rules originally specifically forbidding land use change from any other form of agriculture to vegetable production because of the extremely high relative levels of contaminants this type of agriculture adds to waterways. This Policy contains no mention of those above the 75th percentile N leaching level needing to reduce to below the 75th percentile level, and Policy 3(d) only stating a 10% reduction in N discharge and a “tailored” reduction in the other contaminants needing to be achieved across the sector. At the same time, they are expected to make a tailored reduction in other contaminants, with those discharging more expected to make greater reductions. But this is when comparing themselves to themselves, not when comparing them to other forms of land use. So even if they make reductions, the likelihood is they will continue to be the highest sources of contaminants in the catchment.
40. With the greatest of respect, Policy 3, and Policies 10-13 smack of bias. We know that point source discharges add N and P to the river systems (with unknown levels of E.coli and sediment, plus additional N & P via stormwater systems) far out of proportion with their land area. We don't know the same about commercial vegetable production, but we can assume that the per hectare output of pollutants is, at the very least, on a par with the highest output dairy farms. Yet on the face of it these sectors are not being asked to make the same level of sacrifice as others in the catchment. This suggests that dairy and sheep and beef farms are effectively being asked to subsidise the point source and vegetable sectors.
41. How is a regionally significant point source different from the regional significance that the dairy or sheep and beef sectors play? The argument that significant reductions have already been made via significant investment by point sources is to completely forget the huge amount of investment that the pastoral industries have also made, individually and collectively. And while the vegetable sector is being asked to reduce N by 10%, this is a reduction from a level at, or above, the amount that only the highest leaching dairy farms can meet. Meanwhile these highest leaching dairy farms are being asked to come down to below the 75th percentile.
42. We believe that when it comes to the achievement of the Vision and Strategy there should be no sacred cows. We are also firmly of the belief that when it comes to cleaning up the river, the polluter should pay. Proportionality, equitability, and fairness demand this. Allowing high contaminant emitters to continue as they are, or to allow different, more

¹¹ Section 42A Report: Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments, pg69.

flexible rules to be applied to them will not only slow the achievement of the V&S, but inevitably lead to inequitable, non-proportional outcomes.

43. Overseer

44. We agree with the conclusion arrived at by the S42 authors at p19 that Overseer, when used in regulation, can only be used in a relative sense but not an absolute sense. We also agree with the recommendations at p21, in particular that the tool can and should be used to calculate NRPs, that the results of the analysis be used to help with the development of a FEP, and that the resulting NRP should not be used as a means of compliance.

45. The s42 Report references three recent studies in particular that look at the model and its strengths and weaknesses, and how the model may best be used in a regulatory context. In *Using Overseer in Water Management Planning – An overview guideline*, the following recommendations were made:

“Both parties [regional councils and farmers] have been clear that if you are going to regulate farming, regulate for outcomes desired rather than telling farmers what, and how, to farm by regulating inputs or by controlling more detailed farm management practices... Performance or “effects-based” control is generally considered preferable because it allows for flexibility and innovation on farm.”¹²

46. There remain a number of key issues with Overseer, many of which were discussed in the s42 analysis – it only models to the bottom of the root zone and it is unable to estimate the environmental impact on water bodies of on-farm nutrient losses, to use two examples. It also cannot model novel farming practices and mitigations, nor account for off-sets conducted off-farm. Arguably the key problem with it however, is the level of uncertainty that surrounds the accuracy of the modelled outputs from Overseer. The Parliamentary Commissioner for the Environment’s recent report noted that calibration of the model for pastoral farming was last conducted in 2012 using nutrient loss measurements from 8 different farmlets spread around the country. Of these, only 1 was a sheep and beef farm, and this was an intensive beef block located in Southland.¹³

47. According to the Commissioner’s Report, model uncertainty (or the potential level of error) for predicted nitrogen losses will be around 25-30% for farms that are similar to the farm(s) whose field data helped populate the model - but this level of uncertainty does not include measurement or data input errors, which would further increase the potential error level.¹⁴ If the farms being put through Overseer have different characteristics to the ones used for calibration, then the potential inaccuracy of modelled outputs is likely to exceed 50%.¹⁵ With only one intensive lowland beef farm in Southland used to calibrate sheep and beef farms,

¹² *Using Overseer in Water Management Planning – An overview guideline*, A report by Enfocus for Overseer Ltd., 2018, p6.

¹³ *Overseer and regulatory oversight: Models, uncertainty and cleaning up our waterways*, Parliamentary Commissioner for the Environment, December 2018, Table 3.1, p31.

¹⁴ *Overseer and regulatory oversight: Models, uncertainty and cleaning up our waterways*, Parliamentary Commissioner for the Environment, p36.

¹⁵ *Overseer and regulatory oversight: Models, uncertainty and cleaning up our waterways*, p37.

the expectation would therefore be that accuracy levels for hill country sheep and beef in the Waikato will be very low.

48. Uncertainty is unavoidable with modelling. However, certainty – or more specifically a high degree of accuracy - is important if a particular model is planned to be used directly by regulators to place controls on enterprises. If uncertainty levels are high, as they are with the current Overseer model as regards sheep and beef farms, then the model can only be used to understand relative individual environmental performance, or to try and clarify aggregate sub-catchment or catchment contaminant levels. We therefore agree with the s42A analysis at pp98-100.

49. Nitrogen Reference Points

50. The intent of PC1 is to prepare the community for what is coming in the decades ahead. The first task that must be completed is to gather information about the total size of the contaminant bucket, and who is contributing what to that bucket. As a community, we deserve to have that information put in front of us. We also deserve to understand how much each contaminant needs to be reduced to achieve Objectives 1 and 3 of the Vision and Strategy. This is the key value we see in the calculation of per hectare Nitrogen Reference Points.

51. Therefore, rather than simply requiring pastoral enterprises to calculate their own individual NRPs, all entities, enterprises, and land uses need to calculate NRPs on a per hectare basis (along with estimated levels of phosphorus, E.coli, and sediment where possible). We need to know where we are now, as well as where we need to get to in the future.

52. This measurement necessarily needs to include not just pastoral enterprises, commercial vegetable growers, and point source dischargers, but also plantation forestry blocks and native forest where these are not already accounted for within an individual enterprise. We do not envisage any need to put such forestry and native blocks through the Overseer program as the WRC will already have data describing average contaminant loads from these areas, so it is a simple matter of determining area and applying the loadings to work out averages per hectare and total contribution.

53. However, we are completely opposed to the use of NRPs for “grandparenting”, or any Policies or Rules that require the NRP be used as a starting point, and reductions required of all entities from their initial starting point. Again, this gets to the issues of fairness, proportionality, and equity.

54. The s42A analysis failed to discuss the key issue with grandparenting that we raised in our original submission, although they have recommended that Policy 2(d) be deleted, which is one of the key sub-clauses in this matter. Compare two neighbouring and effectively identical farms, with the same type and numbers of stock and similar cropping and fertiliser regimes. The first has mitigations already in place – constructed wetlands, stock exclusion from major water bodies, and detention bunds and ponds. The second has none of these.

Because the Overseer model accounts for some mitigations, the first farm will have a lower NRP than the second.

55. If requiring reductions based from the grandparent NRP, the first farm with the low NRP will find this difficult, if not impossible. All potential mitigations are already in place, leaving stock reduction as the only option. Meanwhile the second farm has the ability to potentially increase stocking intensity, so long as they put in place mitigations that will see their high NRP reduce. This is a perverse outcome, effectively rewarding those that are already high emitters and penalising those that have tried to do the right thing. However, the amendments associated with NRP regulations, as they currently stand (Policy 1(b1) for example), still would allow this to happen.
56. Another key issue with NRPs, and requiring reductions based on these, is that they can't account for edge-of-field mitigation. Edge-of-field mitigation is a key mitigation tool that can and should be used to help control contaminants, yet this cannot currently be modelled in Overseer. Such mitigations are therefore unlikely to be used by farmers if these cannot be accounted for. Policy 9(d) does allow edge-of-field mitigation to be apportioned to different enterprises, but given uncertainty about how this will be conducted, and what impact such mitigation would have back at an individual farm level, we are of the opinion that such mitigation will be a lower priority than it otherwise might have been.
57. The other key issue with any policy or rule stating farmers must first calculate their NRP and then keep to, or reduce, that NRP over the next ten years is that such a rule is neither proportional nor equitable when we look at where that nitrogen is coming from. Nitrogen leaching losses from dairy land have increased 240 percent since 1972, due both to an increase in the amount of dairying land, and a more than doubling of the N leached per hectare on dairy land due to intensification and increased nitrogen fertiliser use. To put this into perspective, the amount of N leached from non-dairy pastoral use only increased by 4% since 1972 (this includes horticulture and commercial vegetable production).¹⁶ Under the doctrine of "the polluter pays", reductions in individual enterprises should be commensurate with their current level of discharge.
58. While it may appear that this idea of polluter pays has been used by the s42A authors in the *Officer's Block 2 Tracked Changes "Recommendations"* in Policy 1(b) and (b1), we disagree with the recommended changes.
59. Policy 1(b) requires reductions in farming activities with moderate to high levels of discharge to reduce their discharge proportionate to the 2016 amount of discharge. As we discussed earlier, such a policy actively discriminates against those farmers that have already got mitigations in place, and instead favours those that have not done the right thing.
60. Policy 1(b1) we agree with in part. We agree that those emitters above the 75th percentile leaching value should reduce N loss to below the 75th percentile. However, the Glossary of

¹⁶ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments: Section 32 Evaluation Report September 2016*, p59.

Terms only refers to dairy farms, and other Policies attempt to deal with commercial vegetable growers and point source dischargers – two of the highest emitting groups per hectare. As we discussed earlier, we believe all entities should have their NRPs calculated. If any entity is above the 75th percentile, then it should start taking immediate steps to reduce to a level below the 75th percentile.

61. Cultivation, slope and setbacks

62. In our initial submission, and as was noted in the s42A Block 2 Report at p716, we stated that we fully supported Rule 3.11.5.2. We misread this rule as originally written, in particular clause 4(c), which stated no part of the property or enterprise over 15 degrees slope is cultivated or grazed. We wish now to clarify our error, and our position.
63. Our error was simple – we mis-read this clause and believed it only involved full cultivation of land over 15 degrees, not the grazing of land. We continue to believe that, unless minimum tillage, direct drilling, or helicropping techniques are used, that full cultivation of steep slopes should not be a permitted activity.
64. However, we completely disagree with the notion that land over 15 degrees of slope cannot be grazed. As someone who was born and raised on an extensive sheep and beef farm (outside the catchment), with much of the land greater than 15 degrees slope, I am well aware that responsible grazing management techniques and stocking rates can and do ensure the continued health and wellbeing of the soils and pastures on steep hill country, and do not lead to increased erosion. Erosion risks can also be managed via judicious planting for erosion control.
65. Therefore, for Rule 3.11.5.2, we seek an amendment to the Officer's Block 2 "Tracked Changes" Recommendations. Clause c(4)(c1) we seek to be deleted in its entirety. Further we also agree at p710 with the s42A authors key recommendations, apart from the removal of "25 degrees for grazing" in 710(a).

66. Stock exclusion

67. Policies 2 and 3 refer to undertaking a tailored approach to diffuse discharge management. The S32 analysis noted that such an approach is risk-responsive and more cost-effective than requiring everyone to carry out the same actions, regardless of relevance or effectiveness. This is the rationale used for all farms to operate under a Farm Environment Plan or similar¹⁷. Yet the amended Rule 3.11.5.4(5) then explicitly runs contra to this approach by demanding cattle, horses, deer, and pigs are excluded from waterways.
68. We must make clear that we are not opposed to stock exclusion from water per se. But we are opposed to any blanket rule excluding stock from waterways. This is an input-based rule, and we firmly believe that rules should be based on outcomes.

¹⁷ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments: Section 32 Evaluation Report September 2016*, p169.

69. In the section on Diffuse Discharge Management above we discussed that stock exclusion potentially achieves far smaller beneficial outcomes for E.coli management than other forms of mitigation, and further noted that demanding this of sheep and beef farms will impose such a cost on them as to make it unlikely they will be able to afford other, potentially more effective, mitigations. Further, we also noted that the outcome or rewards stock exclusion offers in terms of water quality improvements may be very small relative to the cost associated with achieving this, which runs contrary to the principles of proportionality, fairness, and equitability meant to underpin PC1.
70. And the question must be asked – are we using a sledgehammer to crush a nut? We don't know how big the bucket of contaminants is, or who is contributing what. We don't know how much we need to reduce contaminants by, or what the impacts of certain mitigations will be. For example, we do know that the largest source of faecal contamination is overland flow from dairy farms (i.e. not faecal matter deposited in un-fenced waterways), so just how effective will fencing off all waterways on sheep and beef farms actually be?
71. We argued in our initial submission that in the first instance, what constitutes a water body is not defined in this Plan Change process. This must be immediately corrected.
72. The authors of the s42A Block 2 report have gone even further in their recommendations than those originally proposed, and suggest widening the stock exclusion rule to cover smaller rivers, drains, and streams and all ephemeral watercourses. For the reasons outlined above, we adamantly oppose these amendments. The authors concentrate their analysis on microbial contamination of waterways. As we have already noted, if reductions in these contaminants is the primary focus, then the most effective rule would instead demand natural and constructed wetlands, as these are a far better method of microbial contaminant removal (and other contaminants) than stock exclusion.
73. Without a clear definition of a water body, the s42A Block 2 authors appear to have attempted to define it themselves in Schedule C(6). Their definition would appear to include all streams and drains, whether or not they hold water all year round, and all wetlands, which presumably also includes all springs, whether these be ephemeral or not. They also specifically state at p890 that we should not adopt the draft national regulations of the National Standards for Stock Exclusion.
74. Definitions are important. Without them any regulation is open to more interpretation. Take what constitutes the bed of any stream, whether flowing intermittently or not. Effectively this could mean any depression in the land that flows during rainfall events must conceivably be fenced. Any spring that only appears when water table levels are particularly high, and disappears for much of the year must be fenced. Any part of the land where water ponds after heavy rainfall events, and remains there for days or weeks must arguably be fenced.
75. We oppose the amendments proposed by the s42A Block 2 authors in Schedule C(6). We absolutely disagree with their comments at p890 that the draft regulations would not meet the requirements to achieve the water quality objectives of the V&S, and we note they

present no evidence to back up this assertion. Stock exclusion is one tool in the contaminant mitigation toolbox. It should not be the only one. Stock exclusion for extensive farms, on highly sloped land, is not cost-effective, and is potentially not as effective at removing contaminants as other mitigations. Therefore, we recommend deleting the amendments to Schedule C, and instead propose the draft national regulations of the National Standards for Stock Exclusion be the basis for the stock exclusion rules of Schedule C of PC1.

76. Urban/point source discharges

77. The authors of the s42A Block 2 Report note in their summary at p991-994 that PC1 does not contain any additional rules for point source discharges as the existing Regional Plan already addresses these. They recommend maintaining the Policies that apply to point source discharges, and to not seek equal application of PC1 Policies and Rules to diffuse discharges. This is despite their comment that there is a perception of favourable treatment of point sources, and their comment at p996 that the current point source discharge framework: *“provides a lot of flexibility in decision making and has resulted in a reliance on precedent to guide such decisions, with little targeted guidance.”* They recommend PC1 contain nothing more than providing more specific policy guidance for point source discharges.

78. However, at p1014 they also note:

“Officers consider that it is important to consider the equitability of the approach taken to different sectors, so as to ensure that the overall package of management proposed through PC1 is as fair and equitable as possible.”

79. We would re-iterate that the s42 Block 1 Report, at p400 recommends Objective 3 is changed to read: “Actions put in place and implemented by 2026 to reduce diffuse and point source discharges... are sufficient to achieve the short-term water quality attribute states in Table 3.11-1.”¹⁸ Despite this, no coherent Policy or Rule exists in the Block 2 S42A Report that would mean point source dischargers have to take any action to achieve this Objective. How is it that these high polluting enterprises can simply continue on as they are?

80. The authors state that the perception of favourable treatment to point source discharges is unfair, due to the comprehensive consenting process point source discharges have already gone through, the considerable costs to communities of complying with such consents, and the considerable reductions in the effects that point source discharges, particularly municipal discharges, have had on water quality over the last few decades. They consider it is more appropriate that the WRC review such consents once PC1 becomes operative or as each consent comes up for renewal, and that PC1 sets a ‘direction of travel’ which point source dischargers are now well aware of.

81. To take these points in order;

¹⁸ Section 42A Report: Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments, pg69.

82. PC1 in its current guise would require most diffuse discharges of contaminants to undergo the same sort of comprehensive consenting and monitoring process (relative to their size and importance) that only point sources, up to now, have had to undertake. Effectively this 'levels the playing field', so to speak, but this is only from a process perspective – most farmers will now require a consent to farm, a similar approach to that taken with point sources.
83. However, the argument that the community has already incurred significant costs in complying with point source discharge consents, and to use this as one of the justifications for not having PC1 rules applied to them is deeply flawed. The community has incurred significant costs in setting up and maintaining municipal wastewater treatment systems, but how is this any different to the significant costs individual landowners incur in installing and maintaining their own wastewater treatment systems (which includes the costs of applying for the consents to build such systems)? The only difference is that, in the case of municipal systems, these costs are aggregated and spread amongst the community.
84. In a report released by the Healthy Rivers Technical Leaders Group, *Municipal & industrial water values in the Waikato River catchment*, it is estimated that the replacement cost of the municipal wastewater systems currently in place is \$194 million.¹⁹ If we take a conservative estimate of 60000 households living in urban centres in the catchment, the cost to individual households to replace current systems would be \$3233. To put this into perspective, the cost for an individual to install a wastewater system on farm starts at around \$10000, or more than three times the cost. Thus, to suggest the investment already done is a reason for excluding such systems from PC1 is a nonsense.
85. And this is to forget for a moment the huge investments made, in the main by the dairy industry, to capture and treat on-farm effluent. Such systems can run into the hundreds of thousands of dollars. The DairyNZ website notes there are more than 4000 dairy farms in the Waikato. If we conservatively estimate the replacement cost of an effluent system at \$110000,²⁰ then the investment made by dairy farmers to manage their effluent is \$440 million. When this investment is added to the mix, the increased investment that diffuse dischargers have made in comparison with point source dischargers becomes even greater.
86. When we consider the investment made in stormwater systems, the investment cost disparity between point sources and diffuse sources looks even more stark. Remember that stormwater systems do not, in the main, go through any form of treatment or attenuation, and are not even monitored for the contaminant load they add to the river system.²¹ Within urban areas there will be many stormwater outlets, all of which discharge directly to the Waikato or Waipa rivers. Effectively, we can consider stormwater systems as being exactly the same as diffuse discharges of contaminants.

¹⁹ Anna Robak, *Municipal & industrial water values in the Waikato River catchment*, Opus International Consultants Ltd., Report No. HR/TLG/2015-2016/4.10, Table 1, p2.

²⁰ <https://archway.nz/wp-content/uploads/2017/03/Cost-benefit-analysis-April-2015.pdf>

²¹ Anna Robak, *Municipal & industrial water values in the Waikato River catchment*, Table 1, p2.

87. The estimated cost of replacing municipal stormwater systems is \$6 million.²² Compare this with the investments already made in on-farm mitigation that do not include dairy shed systems. While the actual amount is unknown, just the stream fencing and riparian planting alone to manage contaminants on-farm must run into the hundreds of millions of dollars.
88. Then we come to the argument that point source discharges have made considerable reductions in the effects that they have had on water quality over the last few decades. Again, we believe such an argument is deeply flawed. Yes, we have stopped putting untreated human effluent straight into the river systems, and by so doing water quality is much better than it otherwise would be. But in an exactly similar way, the efforts that have already been made by the pastoral sector to limit impacts have also meant that water quality is also much better than it otherwise would have been.
89. The argument, and the drivers for the Policies and Rules, and thus the actual Policies and Rules we come up with, should not be about how much individuals and communities have done up to this point to reduce their impacts. Instead, we should concentrate on understanding how much individuals and communities are currently contributing to the contaminant bucket. Just because entities have undertaken efforts to reduce their effects does not mean they should be able to continue operating as they do now. To draw an analogy, should an inefficient farm effluent system that leaks be able to continue as it is, on the basis that it has already made an investment in mitigation? Rather, if we are to hold true to the principles underpinning the Vision and Strategy, and the Objectives of the Vision and Strategy, the debate must focus on where we want to get to, where we are now, what relative levels of contaminants each individual or group contributes to the problem, and therefore what contribution each individual or group needs to make to contaminant reduction.
90. We stated earlier in our evidence that point sources are estimated to contribute about 7 per cent of the nitrogen and 18 per cent of the phosphorus to total catchment loads, despite only making up 2-3% of the catchment.²³ How can any group that adds 3 times as much N and 7 times as much P to the river system compared against the average, be said to have already done its share?
91. To look at things another way, if the entire catchment was urban, we would be faced with a situation where the N levels in the river would be 3 times higher than they currently are, P levels would be 7 times higher than they currently are, and we wouldn't even know how high the E.coli and sediment levels would be. Water quality states would be in a far worse position than they currently are. Effectively, this means the actions of the remainder of the Waikato catchment have subsidised point source discharges up to this point.
92. So how is it fair or equitable to suggest that, because point sources have made reductions, that they should be treated any differently to others within the catchment? To do so will only

²² Ibid.

²³ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments: Section 32 Evaluation Report September 2016*, p60.

mean we could potentially exacerbate the already high differential between what point sources are able to discharge, and what the average level of discharge will be.

93. Hence in our initial Submission, we proposed that Policy 10 be deleted in its entirety, and recommended Policies 11-13 all be amended to remove the differentiation between point source and diffuse dischargers. This view has not changed.

94. As we have already discussed, point sources must be held to the same standards, and face the same targets and outcomes, as non-point sources. They must have to calculate their NRPs, and if this level is higher than the 75th percentile, they must reduce this to below the 75th percentile level by 2026. Just as with non-point sources, future reductions must be commensurate with, and proportional to, the amount of contaminants they add to the system. This is the only way that PC1 will actually be as “fair and equitable as possible”, that we ensure proportionality, and that the polluter pays in proportion to their effects and impacts on river health.

Commercial vegetable production and Policy 3

95. In our initial Submission we supported Policy 3, understanding that commercial vegetable production requires a degree of flexibility in terms of cropping rotations, and that this necessarily also means the methods used to calculate their nitrogen reference point must be different from the methods applied to other land uses. However, given our belief that the Policies and Rules should apply to all entities equally, in order to give effect to the principles of proportionality and fairness underpinning PC1, we would like now to qualify our support.

96. Commercial vegetable production has been implicitly recognised as one of the highest emitting agricultural land uses in Plan Change 1 by Rule 3.11.5.7, which makes land use change from any other land use to commercial vegetable production a non-complying activity. Effectively, Policy 3 (and related rules) would see a different standard applied to this form of land use than other agricultural land uses. While all growers must have an FEP and supply a NRP, and the amount of land that can be used for this type of activity is capped, growers need only to undertake to reduce N discharge by 10% with tailored reductions in the other contaminants, with no set time-frames within which this must be done.

97. We believe this is neither proportional, nor equitable, to other land users. Just as with point source discharges, we believe this will mean that other land uses will effectively subsidise the contaminants that vegetable growers, on average, produce.

98. To ensure equitability and proportionality, the same standards, targets, and outcomes demanded of pastoral land users should also apply to commercial vegetable growers. They too, if over the 75th percentile nitrogen leaching value, must put in place whatever is required to reduce this figure to below the 75th percentile by 2026. We as a community also need to know just how polluting a practice commercial vegetable production actually is.

99. Arguments will be made that the vegetable sector should have different rules applied to it due to its regional, and national, significance. That some crops are impossible or difficult to grow without high levels of nitrogen application and leaching. That the nature of vegetable

growing is such that it cannot be done without concurrent high levels of contaminants entering our waterways. That to apply similar Policies and Rules to vegetable growers will inevitably see lower crop yields and higher prices paid by the general public.

100. We have already discussed that we cannot afford sacred cows if we are to live up to the principles of the Vision and Strategy. Achievement of the goals of Healthy Rivers Wai Ora will not come without significant costs. If this means that vegetable yields must drop and/or prices increase significantly, then this is simply one of the prices we must pay to realise our goals. Until any future nutrient allocation framework is agreed, Policies and Rules applied equally across all land usages is the only fair way to ensure contaminant reductions in proportion to the level of discharge.
101. We made the point in our Block 1 Evidence that one of the key issues with HRWO is that the community don't truly understand the costs of achieving the Vision and Strategy. We stand by that view. Due to issues beyond the purview of this Evidence, we believe the community have a rose-tinted view of the situation and believe the V&S can be achieved purely by focusing on the pastoral sector, without understanding that the highest average polluters, and thus those that should have to reduce their discharges the most, are vegetable production and point source discharges. Just as with Policies 11-13, we support changes to Policy 3 that erase the differences between the rules facing vegetable growers and others in the agricultural sector, although arguably the simplest method to achieve this would simply be to delete Policy 3 altogether (and it's associated Rules), so that vegetable growers would then come under the aegis of Policies 1 and 2. To do otherwise would be to perpetuate the effective subsidisation of these high emitters by others in the catchment.
102. [Analysis of Policies and Rules of Plan Change 1 – Matters Agreed and Disagreed](#)
103. The goal of the initial 10 year timeframe of PC1 is: *“Preparing for future requirements on what can be undertaken on the land, with limits ensuring that the management of land use and activities is closely aligned with the biophysical capabilities of the land, the spatial location, and the likely effects of discharges on the lakes, rivers and wetlands in the catchment....[and] to put in place and implement the range of actions in a 10 year period that will be required to achieve 10 percent of the required change”*²⁴
104. Plan Change 1 developed a series of Policies and Rules that the WRC wished to achieve, and used these as the justification for which the actual rule changes were developed. The s42A Block 2 Report assessed submissions on these Policies and Rules, and made recommendations to amend the Policies and Rules based on this analysis. We agree with some of the analysis, and the amendments proposed, and disagree with others. For the purposes of this section of our Evidence, please note that all comments refer to the Officer's Block 2 “Tracked Changes” Recommendations document.

²⁴ *Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments*, p10.

Matters Agreed and Disagreed

Provision	Clause	Support or Oppose	Decision Sought	Reason for submission
Policy 1	a1	Support with amendments	After “all farming activities” insert: “including commercial vegetable growing”	All activities in the catchment should be subject to the same rules and requirements
	a2	Support with amendments	Should read: “Establishing, where possible, a Nitrogen Reference Point for all properties or enterprises, including commercial vegetable growers and all point source dischargers; and”	
	b	Support with amendments	“moderate to high levels of discharge” needs defining.	“moderate to high” is a nebulous term, and has no place in these rules. More detail is required
	b1	Support with amendments	Delete “and 50 th percentile”, and delete everything after: “to reduce nitrogen loss to below the 75 th percentile”.	We are already requiring high emitters to reduce to below the 75 th percentile, meanwhile the implementation of FEPs will also begin to take effect.
	c	Support	Amend to read: “Progressively excluding cattle, horses, deer and pigs from rivers, streams, drains, wetlands and lakes all waterbodies more than 1m wide that contain water all year round”, and in accordance with Schedule C	See discussion on stock exclusion above
Policy 2		Support		
Policy 3		Support with amendments	Requires a new Clause that references the changes we seek on Policy 1 (a1) and (b1) above.	Vegetable growers that are above the 75 th percentile N leaching need to reduce to below that figure by 2026.
	d	Oppose	Delete this clause, and replace with a clause similar to the amended Policy 1(b1) above.	
Policy 3A		Support		
Policy 4		Support		
Policy 5		Support		

Provision	Clause	Support or Oppose	Decision Sought	Reason for submission
Policy 6		Support	To be clear, we support the deletion of Policy 6 in its entirety	
Policy 7		Support		
Policy 8		Support		
Policy 9		Support		
Policy 10		Oppose	Delete Policy 10 in its entirety	As discussed above, to achieve the V&S we cannot have sacred cows.
Policy 11		Support with amendments	<p>Policy 11 should read: “Application of Best Practicable Option and mitigation or offset of effects to diffuse and point source discharges”.</p> <p>The remainder of the policy should be re-worded to the same effect.</p>	The ability to offset discharges within the same sub-catchment or FMU is an option that should also apply to diffuse discharges. This improves flexibility and equity, and ensures cost-effective mitigation for all, not just point source discharges.
Policy 12		Support with amendments	<p>Policy 12 should read: “Additional considerations for diffuse and point source discharges in relation to water quality targets”</p> <p>The remainder of the policy should be re-worded to the same effect.</p>	Again, the intent here is to provide fairness across the catchment. Diffuse discharges should be treated in the same manner. Why should a consent given to point sources be required to take into account past upgrades, the ability to allow a point source to spread investment over many years, and that further upgrades face a diminishing return on investment when diffuse dischargers do not have these things taken into account? This is particularly so when one considers that the average point source contributes more than 300% of the nitrogen and 900% of the phosphorus than pastoral land contributes to contaminant loads, when measured on a per hectare basis.
Policy 13		Support with amendments	Policy 13 should read: “ Diffuse and point sources consent duration”	Where consented, diffuse discharges should be entitled to the same certainty as point source discharges, including consent term, certainty of investment, and magnitude and

			Part (c): delete: “(including investment in treatment plant upgrades or land based application technology)”	significance of investments made or proposed and their impact on water quality.
Policy 14		Support		
Policy 15		Support		
Policy 16		Support	Policy 11 should read: “Application of Best Practicable Option and mitigation or offset of effects to diffuse and point source discharges”. The remainder of the policy should be re-worded to the same effect.	The ability to offset discharges within the same sub-catchment or FMU is an option that should also apply to diffuse discharges. This improves flexibility and equity, and ensures cost-effective mitigation for all, not just point source discharges.
Policy 17		Support		

	Section of Plan Change	Provision and/or page number	Support or Oppose	Decision Sought	Reason for submission
	Implementation Methods	3.11.4.1	Support		
	Implementation Methods	3.11.4.2	Support		
	Implementation Methods	3.11.4.3	Support		
	Implementation Methods	3.11.4.4	Support		
	Implementation Methods	3.11.4.5	Support the intent, but this method requires a lot more detail	Explanation needed about sub-catchment scale plans “where it is shown to be required”. Who assesses the need for it and what determines this requirement? Who is responsible for funding and	While we believe this method builds on the idea that edge of field mitigation allows flexibility, innovation, and for stakeholders to work together and achieve potentially significantly better outcomes than going it alone, the devil is in the

				allocating costs? What if a landowner wishes to opt-out of such a plan? How will the reduction in discharge be determined, and apportioned?	detail, and nowhere near enough detail is contained in the Plan Change.
Implementation Methods	3.11.4.6	Support			How much will this cost and how will it be funded?
Implementation Methods	3.11.4.7	Support with amendments	<p>Add a new part iv): What current contaminant levels are in each FMU and sub-catchment, and the levels of contaminant discharge in each FMU and sub-catchment by sector</p> <p>Add a new part v): Potential new mitigation tools and technologies.</p> <p>Add a new part vi): Partner with OVERSEER owners to ensure all current mitigation technologies are modelled, and where this is not possible because of a lack of actual data, partner with other Regional Councils/science providers to ensure this research is conducted.</p>	<p>Of all the Implementation Methods, arguably this is the most important, and we are disappointed that the process of gathering information and commissioning appropriate scientific research to inform any future framework has thus far not been done – or, at least, nowhere in the supporting information is it stated where the information gaps lie, and how these gaps will be addressed. We go into this Plan Change 1 with a much more muddled picture than we otherwise should have.</p>	
Implementation Methods	Methods 3.11.4.8	Support with amendments	<p>Add a new part c): Part c) should require the WRC to publish the proposed allocation framework(s) by a defined point in time. We would suggest by 2021 at the latest</p>	<p>We support this amendment with the codicil that the amendments we propose in 3.11.4.7 are inserted into the Plan.</p> <p>By outlining a proposed allocation framework, in effect the WRC would be putting up a ‘straw man’, allowing stakeholders time before 2026 to have a robust debate about its pros and cons, to suggest and agree on what the framework would</p>	

					actually be, which would then have allowed individuals to begin preparing, years in advance, for what will be put in place. The absolute limits or allocations don't matter at this stage. What does is the form the allocation will take.
		Methods 3.11.4.9	Support		
		Methods 3.11.4.10	Support		
	Implementation Methods	Methods 3.11.4.11	Support with amendments	Amend part b): "Research and identify and apply methods...."	b. The more measurements we can make on actual data the better. Obviously this carries some expense, but the Council should be trying to ensure its modelling is made more accurate by the use of actual data. Clause b here suggests that there aren't currently available methods to measure actions and their contribution to the reduction of discharge contaminants so how can it then be monitored in 3.11.4.10 d.?
		Methods 3.11.4.12	Support		

	Section of Plan Change	Provision and/or page number	Support or Oppose	Decision Sought	Reason for submission
	Rules	3.11.5.1	Support	To be clear, we support the deletion of this rule	
	Rules	3.11.5.1A	Support		
	Rules	3.11.5.2	Support with amendments	C(3c1) Delete this sub-clause in its entirety	We discuss above that grazing steep slopes is normal farm practice. This clause is not necessary
	Rules	3.11.5.2A	Support with amendments	A definition of what constitutes "Medium intensity farming" is required	We support this rule, but the WRC must define what it means by "medium intensity"

	3.11.5.3	Support		
Rules	3.11.5.4	Support		
	3.11.5.6	Support	To be clear, we support the deletion of this Rule in its entirety	
	3.11.5.6A	Support		
	3.11.5.7	Support		
	3.11.5.8	Support		
	3.11.5.9	Support		
	3.11.5.5	Support with amendments	Insert a new Matters of Control that reads: ix. Where the Nitrogen Reference Point exceeds the 75 th percentile nitrogen leaching value, actions, timeframes and other measures to ensure the diffuse discharge of nitrogen is reduced so that it does not exceed the 75 th percentile nitrogen leaching value by 1 July 2026.	As we discuss above, the commercial vegetable growing sector should have to play by the same rules as everyone else

Section of Plan Change	Provision and/or page number	Support or Oppose	Decision Sought	Reason for submission
Schedules	Schedule A Registration with Waikato Regional Council	Support		
Schedules	Schedule B Nitrogen Reference	Support with amendments	g. Needs to be amended as follows: "The following records must be retained for	As per normal business practice, farmers should only be required to keep the required records for

		Point	<p>the life of the plan and/or relevant consent, whichever is longer for a minimum of seven years and provided to the Waikato Regional Council at its request.</p>	seven years.
Schedules	Schedule C Stock Exclusion	Support with amendments. However, we would argue that stock exclusion rules should align with the proposed National Stock Exclusion Regulations	<p>1. The water bodies on land with a slope of up to 15 degrees and at least 1 metre in width must be fenced.....</p> <p>2. Delete 2(b) in its entirety</p> <p>6a. Delete the words “or intermittently”, and insert the words: “and that is greater than 1 metre wide on land from 3 to 15 degrees, or all permanently flowing waterways on land 0-3 degrees”</p> <p>6c. Needs amending to say: Any wetland, including a constructed wetland. <u>For the purposes of this section, a natural spring that forms a wet, swampy area as it runs down a hill, and that dries out in summer is not considered a wetland.</u></p> <p>Needs a new Exclusion IV: “Where another mitigation option has been specified in the Farm Environment Plan that is designed to mitigate against the impact of stock in water bodies.”</p>	<p>Draft regulation for Stock Exclusion suggests fencing of water bodies up to 15 degrees slope, but these water bodies must be a minimum of 1 metre wide. All permanently flowing water bodies on land 0-3 degrees should be fenced, as per the Draft regulations.</p> <p>The definition of a wetland needs refining in some way to account for springs that create ephemeral swamps or wetlands.</p> <p>The definition of what constitutes a water body must be improved.</p> <p>The new exclusion III needs to be inserted to line up with Schedule 1 Part (2), where alternative mitigations, other than livestock exclusion, are provided for.</p>

	Schedules	Schedule 1 – Requirements for Farm Environment Plans	Support with amendments	<p>Section 2(a) needs to be amended as follows: “<u>Except as otherwise provided for in part (ii) below</u> a description of where and how stock shall be excluded from water bodies for stock exclusion including:</p> <p>Section 2(a)(ii) needs deleting, and new sentence that says: “for areas with a slope exceeding 15 degrees where stock will not be excluded from water bodies, the provision of alternative mitigation measures”</p>	<p>The reasons for these amendments is to line up with Schedule C Stock Exclusion, and to bring both into line with the NPSFM.</p> <p>Again, stock exclusion may not be either the most practical mitigation measure, nor the most effective mitigation measure (both in terms of cost and efficacy). Where alternative mitigations are deemed to be either; 1) more effective at mitigating discharge; or 2) achieve the same outcome as stock exclusion but are less expensive, then these mitigations should be able to be applied in lieu of stock exclusion.</p>

