

Report to the Collaborative Stakeholder Group – for Agreement and Approval

File No: 23 10 02
Date: 9 October 2015
To: Collaborative Stakeholder Group
From: Chairperson – Bill Wasley
Subject: CSG subgroup: Managing nitrogen and phosphorus at a property-level
Section: **Agreement and Approval**

Disclaimer

This report has been prepared by Waikato Regional Council policy advisors for the use of Collaborative Stakeholder Group Healthy Rivers: Wai Ora Project as a reference document and as such does not constitute Council's policy.

1 Purpose

The purpose of this report is for Collaborative Stakeholder Group (CSG) to understand the sub-group's findings on managing nutrient using the OVERSEER[®] (Overseer) model, so

- they can confirm which options in this report the CSG will consult on October 27th – mid November 2015, and
- discuss how they will respond to questions around allocating responsibility to reduce nutrient loss, including being able to tell people when the CSG will be further advanced in its thinking on this topic.

Recommendations:

1. That the report [CSG subgroup: Managing nitrogen and phosphorus at a property-level] (Doc #3574906 dated 9 October 2015) be received, and
2. That the CSG confirm that the CSG sub-group which met on 7 October 2015 (representatives for dairy, drystock, rural professionals, Māori interests, rural advocacy) have satisfactorily identified:
 - a. options for using the OVERSEER[®] (Overseer) model for managing nitrogen and phosphorus at a property-level, and
 - b. Further information needed from the Technical Leaders Group, in order to set the CSG up for discussions in November and December on allocating responsibility for reducing nitrogen and phosphorus in a staged approach to achieving the Vision and Strategy.

3. That the CSG nutrient limit and Overseer sub-group meets again (open to other interested CSG members, with a pencilled in date of 23 October) after October 13th-14th when the catchment loads are known, to:
 - a. further consider options for allocating responsibility for managing nitrogen and phosphorus at a property level, and
 - b. report back to the CSG at their 23-24th November meeting.

2 Overseer CSG sub-group process

A CSG sub-group met on 7 October 2015. Members had volunteered at CSG 15 in August, and the sub-group had met once on 9th September, reporting back to the CSG on 21st September. At the second meeting, the subgroup included the same representatives for dairy (Rick Pridmore and delegate Charlotte Rutherford), drystock (James Bailey), rural professionals (Phil Journeaux) and rural advocacy (James Houghton), and were joined by delegates Graeme Gleeson and Sally Millar and the representative for Māori interests Weo Maag.

CSG were assisted by Helen Ritchie and WRC policy, consents and extension staff with expertise on Lake Taupo catchment nitrogen rules. The Technical Leaders Group were unable to attend this meeting.

The sub-group revisited policy options from the last meeting, several new ways in which these options could be implemented, and explored questions that they would like to work on further at a next meeting on 23rd October.

This report summarises the sub-group findings. It incorporates feedback on a draft version of the report from the facilitator and several members of the sub-group.

It is recommended that the CSG consider the matters in Section 3 below, and incorporate them into discussion on the policy options that will be consulted on 27th October to mid November.

Sections 4 and 5 will be useful to discuss so that the CSG has some common answers to questions raised in the intensive engagement period. They summarise sub-group ideas about how nutrient reductions could be managed, and what additional information is needed from the Technical Leaders Group.

In addition the report contains:

- Meeting notes. Butcher paper and whiteboard notes taken by Helen Ritchie (Attachment 1)
- Preparation material sent to sub-group members (Attachment 2)

3 Key elements in all options

The sub-group revisited some options from last meeting and developed them further. The table in Attachment 1 sets out the group's analysis. They concluded there are some key elements that are common to any viable policy option. The diagram below sets out how these elements link together.

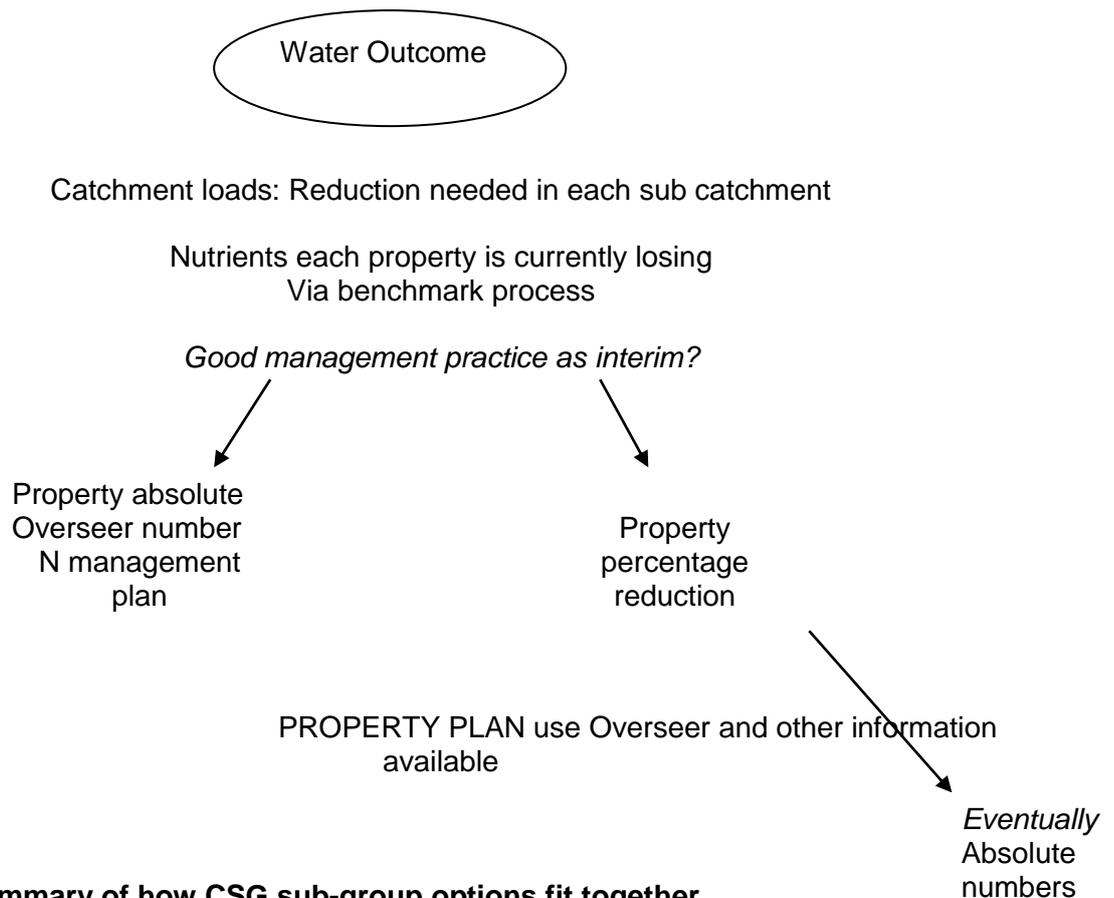


Figure 1 Summary of how CSG sub-group options fit together
(Diagram from Attachment 1 notes)

In order to know that a water quality outcome in a sub catchment is met, all the property-level nutrient reductions have to be assessed and aggregated to a sub-catchment level. In addition, biophysical processes that occur between the property-level and the surface water have to be accounted for. The sub-group was keen to discuss this further with the Technical Leaders Group.

3.1 Overseer

The subgroup confirmed that Overseer is an essential tool to understand how actions on a property influence nutrient outputs. They believe that it should be used in policy options that seek to cap and then reduce nitrogen losses from properties. They also noted that options set out in this report shouldn't be read as locking the CSG into any particular allocation option.

Overseer is less suited to calculating total phosphorus losses from a property. Phosphorus is more akin to 'a set of point sources' while nitrogen loss is truly diffuse. Because phosphorus tends to be generated from Critical Source Areas on a farm and reach water bodies from overland flow, the Overseer model struggles to adequately represent losses from a particular property (it is not a spatial model). The sub-group concluded that phosphorus should be managed through catchment-wide rules and a property planning approach, in a similar way to microbes and sediment. Overseer is still a useful tool to inform phosphorus management on a property (for instance, to determine fertiliser inputs). Also, in order to model and measure change, Overseer and the spatial model Mitigator, will have a key role.

The following option relates to the use of Overseer for nitrogen.

Option 1 Reduce nitrogen using Numerical Overseer limit

Holding people to an absolute number or property level limit that is generated by Overseer has the advantage that it provides the community with a sense of a clear quantum of reduction at property level. A further advantage is that it allows transfers of nitrogen between properties, thus increasing overall economic efficiency for the community. However, it has two major constraints:

- Some mitigations (including some of those extensively used in the modelling) are not in the current version of Overseer. Hence, a landowner gets no recognition of these actions when their nutrient loss is calculated using Overseer.
- Overseer is constantly upgraded, resulting in version changes¹. There are ways to work around changing versions, but they take extra resources to run original input data through each changed version and the council has to be careful about perceptions that landowners are not complying with property limits.

A working definition for this option is:

Numerical Overseer limit for Nitrogen

A numerical Overseer limit is one where a specific amount of nitrogen (specified as a maximum of kilograms of nutrient per hectare which can be lost per annum) is calculated using Overseer, formally allocated to a property by the Council, and cannot be exceeded other than via a consent. Overseer is used to develop a tailored nutrient management property plan that sets out the actions undertaken by the landowner to:

- (a) ensure that the Overseer number benchmarked is not exceeded, and, if required in the plan change to meet water quality outcomes,
- (b) follows actions in the property plan to achieve an agreed reduction in kilograms per hectare per year, over an agreed time frame.

Compliance action is likely if the specified amount is exceeded or the associated nutrient management plan is not followed.

For the 2016 plan change, on balance, the sub-group believe it is **not** necessary or desirable to use an 'absolute' Overseer number. However, the sub-group did see benefits in considering a numerical Overseer limit in future plan changes, as it gives the public a sense of certainty that water quality limits will be achieved.

The first stage toward achieving the Vision and Strategy will need to deal with implementing the new catchment rules and the considerable task of getting property plans in place across the catchment.

If we take a staged approach to nutrient reductions, but don't choose a numerical Overseer limit for nitrogen, this assumes:

1. There will be mechanisms that control further intensification in the first stage e.g. rules to stop the upward creep of nutrient.
2. All properties will still have to create a benchmark record of their inputs and outputs (for instance, as at 2016) so that there won't be an intentional intensification push in the interim period to 'beat the system'.

¹ This is where the same property-level inputs to each new Overseer version could give a higher or lower nitrogen or phosphorus output. We can't predict how each landowner will be impacted because each property has a different mix of inputs, and the changes are not constant for each version change. This means each farm is affected differently by a version change.

Option 2 Cap and then reduce nutrient using a tailored property plan (Overseer plus other knowledge)

This option is preferred by the sub-group. It is similar to the first option, in that the landowner has to benchmark what they are doing and then prepare a plan that lists actions to mitigate contaminant loss. There are two aspects to this approach:

1. Instead of holding a landowner to the Overseer-generated kilograms of nitrogen per hectare per year, a landowner is held to an action plan to achieve a calculated reduction. The reduction would be determined through a percentage change from their baseline.
2. Overseer is used in conjunction with other technical knowledge about mitigations that are not currently in the model².

Advantages of this option is that industry resources are already being put toward this approach and a wider range of mitigations could be considered (that are not in Overseer). A constraint on this approach is the breadth of expertise required to prepare a plan covering all the possible mitigation options and calculate the likely property-level reduction from these actions.

A working definition for this option is:

Percentage change property plan limit for Nitrogen and Phosphorus

A nitrogen and phosphorus property plan limit approach is where the landowner is benchmarked against current practice and then uses Overseer and any other approved technical information that links nutrient loss and actions to develop a tailored property plan to:

- (a) ensure that the benchmark is not exceeded, and, if required in the plan change to meet water quality outcomes,
- (b) follows actions in the property plan to achieve an agreed percentage reduction over an agreed time frame.

Compliance action is likely if the action plan is not followed.

An assumption behind this approach is that the property plan and associated actions would be prepared by a certified professional and the plans and associated actions could be audited.

3.2 Property Plans

The sub-group concluded that tailored property plans were a critical element in achieving reductions of nitrogen and phosphorus, and should be used, regardless of which option above is chosen. There is a separate tailored property plan report to CSG 13th-14th October³ that sets out several options, with detail around process, and choices about roles and responsibilities between WRC and the primary production industry.

In summary, the benefits of a tailored property plan approach are:

² For instance, at CSG 16a, the TLG pointed out that constructed wetlands are not well represented in Overseer. The sub-group notes there is considerable knowledge within NIWA about the effectiveness of this mitigation, which should be able to be brought into a property plan process.

³ Report to CSG entitled Options for Tailored Property Plans. Doc #3563987 dated 9th October 2015.

1. A list of actions is generated that is:
 - a. Flexible and allows innovation, because it is relevant to a particular property's topography, soil type, stock carried or crops grown and current infrastructure and labour units.
 - b. Developed with the landowner (and manager or shareholder)
 - c. Relevant to water quality, where reductions in diffuse contaminants from the farm contribute to meeting sub catchment limits or targets.
2. The implications of day to day and longer term strategic property decisions are linked to environmental outcomes.
3. The expert assistance that is part of the process of developing a farm plan results in:
 - a. A clear list of actions that owners and workers can follow and be confident they are meeting new environmental requirements of the plan change.
 - b. Because they are having to re-visit the whole business to manage within limits, landowners have had to think about what is possible on their farm, through some 'what if' scenario testing that includes both nutrient management and financial implications.

Constraints of a tailored property plan approach are that they:

1. Are resource intensive compared to catchment-wide rules.
2. Require sufficient capability and capacity from both the landowner and expert advisors to develop and monitor them in a consistent way for thousands of landowners.

4 Stages toward achieving Vision and Strategy

Choosing a viable way forward relies on knowing the scale of nitrogen or phosphorus reductions at a property level. Last meeting the sub-group felt this would be easier to judge once the results of the modelling re-runs were discussed at the 1st and 2nd October CSG meeting.

The optimisation model seeks to find the least cost solution for the community overall, and in the first modelling case, discussed in depth at the CSG meeting on 1st October, the model constrained land use change to occur at the rate it has happened in the last 30 years for the first steps (10%, 25%, 50% of Scenario 1 for water quality improvement). Other cases modelled were the same step-wise improvements in water quality, but with no land use change allowed in the first stages, and a case which concentrated on phosphorus reductions and less on nitrogen reductions.

From the modelling re-runs we now know:

- a) The aggregated farm-scale costs (where farm types have been clustered and averaged) of a step-wise approach toward Scenario 1: Water quality improves everywhere and all attributes move up a whole band everywhere.
- b) The 'optimal' set of mitigations and land use change for this step-wise improvement.
- c) That the modelling relies on mitigations that are effective at removing contaminants, but are relatively expensive and untested in a Regional Plan (for instance, requiring a constructed wetland or a sediment trap with overflow into a wetland).

- d) That the steps toward achieving Scenario 1 get progressively harder. It becomes much more expensive and there are more breaches of the water quality attributes after we get past the first few steps. Major land use change becomes important.

On 1st – 2nd October, the CSG decided that the first stage of achieving the Vision and Strategy should involve a 10% water quality improvement in all 74 sub catchments over the first 10 years.

4.1 Ensuring nutrient reductions will meet the water quality outcomes

Because we can estimate the amount of diffuse nitrogen or phosphorus from a property, we can be more specific about tracking amounts of nutrient reductions from actions landowners are taking. This was discussed at CSG earlier this year⁴.

Property scale and subcatchment information needed

The sub-group identified it needs more information if the CSG wants to:

1. Track nutrient reduction from actions landowners are taking and
2. Connect what happens on the land with what we see in the water. For instance, we need to know how actions on farms affect the contaminant measured in the water. The other aspect is knowledge about how reductions in total nitrogen and total phosphorus contaminant load will affect *chlorophyll a* and therefore water quality values (such as clear water for swimming).

Knowing what each property is currently doing is essential for 1) above. This involves a benchmarking exercise, where actual baseline information about each farm is gathered. Overseer is the tool that is useful for this, with a caveat the sub-group already identified⁵. The dairy, drystock and to a lesser extent arable and vegetable growing sectors are all running programmes which use Overseer to estimate the current nitrogen and phosphorus outputs at a farm scale.

It is a big job to get baseline information for each farm. This has been pointed out several times at CSG meetings. It took three years and all the existing industry capacity in Waikato to get 640 dairy farms benchmarked in the Upper Waikato area for the Sustainable Milk plan project. Despite concerted efforts in Manawatu, less than a fifth of the dairy farmers subject to Horizons One Plan nutrient limits, are through the farm planning and then consenting process. To increase capacity and improve skills of people in the industry, DairyNZ is facilitating programmes that are getting good numbers of farm consultants through

⁴ In the report Policy option of a property-level limit for nitrogen and phosphorus] (Doc #3476854 dated 24 August 2015) it states "When considering a property-level limit in a Regional Plan, there is an additional level of certainty required. The contaminant has to be able to be modelled to a community-accepted level of certainty when spending public money or regulating. The CSG decided for this reason, sediment and microbes cannot be allocated to individual properties in the same way that nitrogen and phosphorus can. In policy option discussions, CSG concluded that it is feasible to set property level limits of nitrogen and phosphorus"

⁵ There is highest confidence in Overseer for the most 'typical' farming systems with least variability, particularly dairy systems. There is less confidence for arable and horticulture systems and farms with a lot of bought in feed or that trade stock and make changes throughout a season. Page 3 of Waikato Regional Council 2105. Options for using Overseer model to manage nitrogen and phosphorus at a property-level. Agreement and Approval report to CSG. Doc #3507568 dated 17 September 2015.

accreditation and training programmes (T. Wilson personal communication 25 September 2015).

Setting property-level limits

It is important to know the existing and target catchment and subcatchment loads of nutrient for each step toward full achievement of scenario 1. This information is being calculated and will be presented to the CSG on 13th-14th October by the Technical Leaders Group.

The sub-group discussed whether an optimisation model was a suitable tool to define the required nutrient reduction at each sub catchment and then on each farm. For instance if the load of nitrogen at point A on the Waikato River needs to be at a certain level to help meet swimmability values, then how much nitrogen needs to be reduced on farms in the contributing land area?

The sub-group does not consider that the current optimisation limits set for the 74 sub-catchments are a robust way to set limits for those sub-catchments. Farmer actions and responses are likely to vary from those selected as optimal by the model (for instance, only some properties have suitable soils and topography for the edge of field mitigations).

The CSG suggest that setting specific limits for each sub-catchment for nitrogen and phosphorus is a task that should occur over coming years, using the benchmark data that will be collected in the first period of the plan to 'ground-truth' the information derived from representative farms in the current model. Then clear limits can be set. This does not mean that action will not be ongoing – catchment-wide rules and getting farm plans in place needs to begin immediately and will start to have effect. The Plan Change also needs to signal the extent of change that will be required will be significant, so that farm plans can reflect this scale of change.

5 Equity and allocation

The topic has been discussed once by the whole CSG in August. A report⁶ provided the CSG with information about initial allocation options at a property level. The CSG decision was to re-visit initial allocation options once the results of modelled future scenarios are understood and total load of nitrogen and/or phosphorus is determined.

One of the purposes of the sub-group meeting on 7th October was to discuss options for allocating responsibility to reduce nutrient losses.

At the first sub-group meeting, we noted that equity between sectors and individuals comes up regardless of whether a numerical Overseer limit is chosen, or a tailored property plan. The sub-group spent some time debating how to allocate the responsibility for change, while recognising that further conversations are necessary due to the equity considerations that this raises.

Matters raised included:

1. **Land use change** will be required to meet the Vision and Strategy Scenario 1, therefore:
 - a. the CSG should give people fair warning of this, and
 - b. discuss how to manage the transition, with the way we write the rules and provide incentives, because we know land use change is 'sticky', and that existing landowners may resist changing despite rising costs of meeting plan change requirements.

⁶ Report to CSG entitled "Initial allocation options to permit discharges of contaminants at a property level and the sharing of costs" Doc #3109567 dated 27 July 2015.

2. **Creating ‘headroom’ for existing low intensity land** means existing landowners have to reduce more in order to create space for others. This puts the topic squarely into an allocation debate. Because the modelling has shown large reductions are needed, it may be very difficult or impossible to create headroom to increase business development for one landowner, without causing another landowner to become unprofitable.

The sub-group discussed options such as the use of catchment-scale mitigations (such as wetlands) to create headroom at a sub-catchment level. This allows the option for external funding to play a role. They wanted to quantify how much headroom might be requested for Treaty land or undeveloped Maori land.

3. **While CSG sub-group touched on allocation, no calls were made.** In order to meet the timeline, it is an important topic for the CSG to decide on in their November and December meetings. Several options were discussed at the meeting. One option was that it might make more sense to start with a viable business model for everyone (option was set out in a CSG report but not discussed in any detail)⁷. Some people in the sub-group pointed out that it may be better to start the allocation debate with everyone getting something. Other points raised were the need to explore allocation mechanisms that recognise investment in current use to minimise social disruption but over time to achieve the Vision and Strategy and that there is a need for a mechanism to ensure suitable land use for land type. The sub-group also looked at options for ‘how much the highest emitters should reduce by.’
4. **Small blocks** should be part of the required reductions, and should be subject to catchment-wide rules, but it is not cost-effective to create property plans for properties below a certain area threshold (e.g. 4 or 10ha), unless they are commercial properties (e.g. GST-registered).
5. **Deciding the percentage reduction for each property** requires further discussion. The sub-group considers the first step is to ensure everyone is using good management practice. Then, percentage reductions can be allocated. Possibilities include:
 - a. everyone above a certain threshold of emissions reduces by the same percentage, or
 - b. there is a scaled percentage based whereby high emitters have to achieve a higher percentage reduction than lower emitters, or
 - c. there is a different percentage for each sector based on risk.

The sub-group also wants to explore further the option for industries to identify on which properties can the greatest gains can be made to achieve reductions. Benchmarking will be important, and it could be used to ensure people who have done good practice already are acknowledged (because their ‘baseline’ will be lower and therefore their percentage reduction should equate to a lower load reduction).

5 Summary

Overall, the group concluded the Overseer model was a valuable tool to understand how actions on a property influence nutrient outputs. Output models promote flexibility and innovation. Constraints centred around the fact that Overseer is being updated all the time and does not include all mitigations being used.

The sub-group concluded:

⁷ Report to CSG entitled “Initial allocation options to permit discharges of contaminants at a property level and the sharing of costs” Doc #3109567 dated 27 July 2015

1. Phosphorus loss should not be managed through an absolute Overseer-generated number; however Overseer will be a useful tool to identify property-specific actions through a property plan approach.
2. Overseer can be used to reduce nutrient giving people a percentage reduction from their baseline. This requires a resource intensive process of obtaining information to benchmark what people are doing now on their properties. A tailored property plan with actions that the landowner is held to, will be the key mechanism to achieve reductions.
3. At this stage, a simpler approach to small blocks should be taken, where an area limit is set, below which only the catchment-wide rules will apply. Some land uses may still be required to do a tailored property plan, depending on risk of nutrient losses.
4. More discussion with TLG and information about subcatchment loads and modelling is needed to be able to link actions on the land with water quality reductions.
5. More discussion at a sub-group level and then with the whole CSG is necessary to explore options for allocating responsibility for reducing nitrogen and phosphorus.
6. Because of the amount of change on the land that is needed to meet the Vision and Strategy, the approach in 1) -3) above, may be only suitable for the first stages. There are no easy answers for the CSG when recommending how to allocate responsibility for achieving reductions, but the group is willing to keep working toward some ways to answer questions that will come up in the community engagement period.
7. Any initial approach chosen needs to halt current intensification trends, meet the 10% reduction in 10 years and signal more to come.

Justine Young
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Bill Wasley
Independent Chairperson, Collaborative
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Attachment 1 - Facilitator Helen Ritchie's notes of the CSG subgroup meeting on 9 September

Attachment 2 – Preparation material sent to meeting participants

6 References

Arbuckle, Chris. August 2015. Stocktake of Regional Council Uses of OVERSEER® Prepared for Ministry for Primary Industries; Regional Council Resource Managers Group and Regional Government.

Collaborative Stakeholder Group Workshop 14 Notes. 10th and 11th August 2015, DM #3471459.

Facilitation session notes from CSG Workshop 13, 2 and 3rd July 2015 DM #3445619.

Waikato Regional Council 2014. Report to CSG workshop 2 Case Study I: Lake Taupo catchment property-level nitrogen discharge limits document number 3034258.

Waikato Regional Council 2015b. Exploring industry farm plans as a policy option; including industry-supported farm plan with regulatory backstop” DM# 3454905.

Waikato Regional Council 2015c. Policy options for sediment, microbes, nitrogen and phosphorus. Agreement and Approval report dated 22 June 2015. DM #3425911.

Waikato Regional Council 2105. Policy option of a property-level limit for nitrogen and phosphorus. Agreement and Approval report to CSG Document #3476854 dated 24 August 2015.

Waikato Regional Council 2105. Options for using Overseer model to manage nitrogen and phosphorus at a property-level. Agreement and Approval report to CSG. Doc #3507568 dated 17 September 2015.

Waikato Regional Council 2015. Report to CSG entitled Options for Tailored Property Plans. Doc #3563987 dated 9th October 2015.

Wilson, Theresa. DairyNZ product development manager. Personal communication 25 September 2015.

Attachment 1 Meeting notes of a sub-group of the Collaborative Stakeholder Group

Nitrogen and phosphorus limits and Overseer nutrient model – meeting #2

Date: 6 October 2015, 12:00-3:00pm

Location: Waikato Room, Kakariki House, 293 Grey Street, Hamilton East

Attendees: CSG members/delegates – James Bailey, Charlotte Rutherford, Phil Journeax, Rick Pridmore, Weo Maag, Sally Millar, Graeme Gleeson, James Houghton
WRC staff – Justine Young, Ruth Lourey, Mark Brockelsby, Jon Palmer (on video)

Facilitator: Helen Ritchie

Apologies: TLG

Purpose: To clearly identify the key options for ensuring property level action and allocating responsibility to reduce nutrient losses (including possible use of Overseer), and their implications (benefits/ constraints) so that CSG can continue to build their policy framework and consult on key methods with the community/ sectors.

Practical result: A clear summary of the options and their implications for the CSG

All options start with Overseer Baseline/ benchmarking				
	Option 1 Absolute number from Overseer	Percentage reduction number from Overseer	Action list from property plan	Canterbury example - MGM table matrix good management (starting point)
Pro's	Trading Holds to a certain intensity - Can reduce intensity	If applied to everyone, is fairer because high emitters reduce less	Incorporates wider management e.g. planting, wetlands (not in Overseer)	Identifying and getting rid of worst practices and quantifies benefit
	People believe it – perception things will change		Acceptable to farmers/industry buy in resource	Have to define as reducing loss
	Flexibility to meet cap - plan	(not based on input control) Can quantify percentage reduction	Deal with all four contaminants at once. Better for industries Overseer doesn't deal with well	
			Provides more advice/input	
Con's	? Can it be enforced? - Numbers?		Plan – reduces flexibility if specified actions (depends on how it's done)	Blunt instrument - can't deal with complexity
	Plan – reduces flexibility		More expert input/guidelines needed	Hard to implement unless it gets down to input controls
	Limited to what's in Overseer		Could be challenged	
	Versions – as Overseer changes, effect varies across farms			
	Angst of allocation			
	Assumes skill is there			

Variations/explanations:

- “band” instead of absolute number
- farm plan includes farm optimisation stocking rate, grazing management, infrastructure, animals in right place seasonally
- going above baseline → different activity status
- Public need to know that total load will be reduced
- How to retain flexibility for low emitters?
- Getting everyone a baseline is a big task
- P – no regulatory P-limit at property level but to model/measure change Overseer (+Mitigator) will have a role.

Headroom – volume required makes a big difference

- Can innovation take care of this?
- Can't rely on it
- Can only achieve via driving harder or relaxing limits
- Catchment level mitigation can be funded by government can create headroom if it gets more loss reduction beyond farm level
- Options 1 and 2 have Option 3 Option 3 has 1 or 2 in background (see diagram at the end)
- Difference is what you focus on holding people to
- 3 (Action list) works better for industries not well serviced by Overseer.
- Getting everyone with a baseline and plan is our transition (will take 10 years)
 - Massive commitment
- An option industry is backing has the advantage of their resource (cooperative way forward)
- Do smaller blocks later e.g. 10ha except commercial e.g. GST registered

How the plans can be effective?

(achieve the change required and provide assurance)

- 10 years – minimum practice – catchment and get farm plans in place
- Signal move to an absolute number for N in next period (baseline records = 2015)
- Timeframes for general practices or show how you will achieve it in your farm plan

- Requires expertise certified to prepare and annual record/nutrient budget and audit requirement for actions (different system for sectors)
- Responsibility for cumulative/aggregated reduction to ensure catchment limit is met
- Each farm models actions and other information for things not in Overseer to estimate each farm's reduction.
- Aggregate all these (Waikato Regional Council) catchment model – CLUES
- Scaled percentage reduction or threshold + even percentage
- Use catchment wetlands to create headroom and government pays?
- People who have done good practice already: this gets acknowledged because their 'baseline' will be lower and therefore their percentage reduction = a lower load reduction
- N+P in tributaries
- Won't have time now to model
- 74 sub catchment limits from real data.
- Can apply a percentage reduction across the board/rules different for each sector depending on risk
- Once have real data, set reductions limits for N+P in sub catchments
- To determine how much individuals have to reduce:
- Want to target where we can make fastest gains (identify poor performers)
- Sector responsibility model stop the intensification
- "Grand parenting + GMP" – efficient operators followed by everyone takes a percentage reduction
- SLUI process in Horizons – links farm plans + actions to P loss reduction
- All of this has to meet the 10% reduction and signal more to come

Water Outcome

Catchment loads what reduction in each sub catchment?

What is each farm currently doing?
Benchmark use Overseer

Good management practice as interim?

Property absolute
Overseer number

Property
percentage
reduction

PROPERTY PLAN use Overseer and other information available

Eventually

Absolute
numbers

Attachment 2 Preparation notes and meeting Plan for CSG sub-group

6th Oct 2015 12-3pm, Kakariki House

Purpose: To clearly identify the key options for ensuring property level action and allocating responsibility to reduce nutrient losses (including possible use of Overseer), and their implications (benefits/ constraints) so that CSG can continue to build their policy framework and consult on key methods with the community/ sectors.

Practical result: A clear summary of the options and their implications for the CSG

Where we are at:

Our first meeting (Sept 9th)

- Our first meeting explored benefits and constraints of using Overseer in different ways – see notes
- We said that use could depend on the size of the problem
- We said we will look at workable options for allocating responsibility next time
- We noted P is more like a collection of point sources while N is truly diffuse and actions for P are similar to those for microbes and sediment and P could be managed through best practices (catchment-wide rules and property plans to identify CSAs, informed by nutrient budgets to identify optimum Olsen P and better P fertiliser management. [On presenting back to CSG at Sept 21 meeting, question was asked “Why are we still even considering use of Overseer for a hard limit for P?”]

CSG17 (Oct 1-2)

- CSG heard modelling results of Round 2 and identified limits and targets
 - 10% in 10 years
 - 25% in 20 years
- Implications of current option for responsibility for making change:
 - Catchments discharging more (within an FMU) will have more to do (larger gap from current state)
 - Catchments in different FMUs may have different band as their limit (could affect size of gap from current state)
- CSG are interested in models of catchments deciding on who/ how to make reductions; sector by catchment identifying how to make gains

Comparing our discussions at Sept meeting and CSG limits

- Last time this group discussed
 - Stage 1 - everyone doing GMP (more equitable) + stop land conversion + some edge of field work = ~7% reduction
 - Stage 2 – how much further reduction required?
- Compare this against Table 10 in Round 2 results (how model found reductions could be achieved at least cost on current land use)
- What does this mean for us?
 - How to achieve 10% in 10 yrs while we signal 25%
 - How to achieve 25% in 20 yrs while we signal 50%
 - How to achieve 50% in 60 years

Focus for today

- How to allocate responsibility at property level?

- How to ensure action/ provide assurance that sufficient change will occur at property level?
- How to create headroom?

How to manage P?

Check: Do we think P should be done via practices, achieved through catchment-wide rules, property plans that include CSAs, informed by nutrient budgets and improved fertiliser practice plus use of edge of field at farm and catchment level – i.e. set aside a hard limit for P at property level?

How to manage N?

Options to ensure action at property level to achieve required reductions:

- Hard limit (manage to an N-loss figure in kg/ha using Overseer)
- % reduction (manage to a % reduction by comparing against an original loss in Overseer)
- Action list (use Overseer to create an action list as part of a property plan approach; actions can be monitored and expert opinion as to % reduction is calculated back to a catchment reduction figure)
- Proxy factors (table of most likely factors that affect N loss and what you have to do in relation to these in order to be compliant)
 - Which options are most workable?
 - Which options create greatest assurance of achieving the reduction?
 - Which options can create headroom? How?
 - How do we allocate responsibility within a catchment?