

HORIZONS REGIONAL COUNCIL

PLAN CHANGE 2 PROVISIONS – COUNCIL PROPOSED VERSION

In the provisions that follow:

Text shown in **black** (underlined and struck out) represents the decisions version of PC2.

Text shown in **red** (underlined and struck out) represents the Council's proposed provisions, following expert conferencing between planning and farm system experts for the parties and mediation.

References in comment boxes are to the parties' notices of appeal, and indicate from where the scope for the proposed changes are derived.

In the Regional Council's view, scope for the primary changes listed below (i.e., the replacement of the alternative consenting pathway with the risk tool) are provided by Ngāti Turanga's appeal at Heading 2, (1)(a) and Fish & Game's appeal at 8.1. Further elements of the various notices of appeal are noted for other changes where relevant.

Policy 5-8: Management and Regulation of intensive farming land^ use activities affecting groundwater and surface water^ quality

In order to give effect to Policy Policies 5-3, 5-4, 5-5, 5-6 and 5-7, the effects of intensive farming land^ use activities on groundwater and surface water^ quality must be managed in the following manner:

(a) **Nutrients**

- (i) Nitrogen-leaching maximums must be established in the The regional plan will specify limits¹ that ~~which:~~
 - (A) minimise the risk of nitrogen leaching loss from intensive farming land^ use activities;
 - (B) take into account all the ~~non-point~~ sources of nitrogen in the catchment;
 - (C) will contribute to address key sources and pathways of contaminant loss through the implementation of the strategy for surface water^ quality set out in Policies 5-2, 5-3, 5-4 and 5-5 and the strategy for groundwater quality set out in Policy 5-6; will achieve the strategies for surface water^ quality set out in Policies 5-2, 5-3, 5-4 and 5-5, and the strategy for groundwater quality in Policy 5-6
 - (D) recognise the productive capability of land^ in the *Water Management Sub-zone**;
 - (E) are ~~achievable~~ achieved achievable on most farms using *good management practices** and *best management practices**;
 - (F) provide for appropriate timeframes for achievement ~~where large changes to management practices or high levels of investment are required to achieve the nitrogen-leaching maximums.~~
- (ii) Existing intensive farming land^ use activities must be regulated in targeted *Water Management Sub-zones** to achieve the limits ~~achieve the nitrogen-leaching maximums~~ specified in (i) except as provided for in (iia) and (iib) below.

Commented [CRL1]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1). The transition from referring to 'nitrogen leaching maximums' to referring to 'limits' is carried through the provisions without further comments.

Commented [CRL2]: Ngāti Turanga (Heading 1.3, Heading 2, (1)(a)); F&G (7.5-7.6, 8.1).

Commented [CR13]: Recommended by planning experts at conferencing.

¹ The word 'limits', as used in Chapters 5 and 14, has its natural meaning and is not used in the sense used in the National Policy Statement for Freshwater Management 2020.

(iia) Existing intensive farming *land*[^] use activities which do not comply with (ii) must be regulated to reduce ~~the risk of~~ nitrogen leaching ~~loss~~ from the *land*[^] to the maximum extent reasonably practicable in the shortest feasible timeframe ~~which is in excess of the nitrogen leaching maximums established under (a)~~ by implementing measures, including *good management practice*^{*}, and additional measures, ~~to minimise the degree of non-compliance~~, having regard to:

- (A) the contribution of the nitrogen leaching ~~loss~~ from the *land*[^] to cumulative nitrogen leaching ~~loss~~ within the *Water Management Sub-zone*^{*};
- (B) the actual and potential effects of the nitrogen leaching loss from the *land*[^] on downstream groundwater and surface *water*[^] quality;
- (C) the extent of non-compliance with the nitrogen leaching ~~maximums~~ *limits* specified in (a) (i) and the timing of planned reductions in nitrogen leaching ~~loss~~ from the *land*[^];
- (D) the feasibility, practicality, and cost of implementing measures to achieve ~~achieving~~ the nitrogen leaching ~~limits~~ *maximums* specified in (a) (i) having regard to the *land use capability class*^{*} of the *land*[^]; and
- (E) the strategy for surface *water*[^] quality set out in Policies 5-2, 5-3, 5-4 and 5-5, and the strategy for groundwater quality in Policy 5-6.

Commented [CRL4]: Reflects the conceptual difference in regulating the risk of nitrogen leaching, rather than exclusively regulating estimated leaching using Overseer. Additions are repeated below, without further comments.

Commented [CRL5]: Redundant terminology. Deletions are repeated below, without further comments.

(iib) Existing intensive farming *land*[^] use activities which do not comply with (ii) but which ~~demonstrate are intended to~~ *the intention to a* transition to an alternative non-intensive farming *land*[^] use must be regulated to ensure that they are able to continue for a ~~limited period not exceeding five years of time~~ in order to enable that transition and only where it can be demonstrated that there is no increase in the ~~risk of exceedance of the nitrogen leaching loss~~ from the existing intensive farming *land*[^] use activity during that period. ~~maximums established under (a)~~.

Commented [CRL6]: Ngāti Turanga (Heading 2, (1)(b)); F&G (7.6 and 7.11) - The transitional pathway in Policy 14-6(d)(ii) is enabled by 5-8(iib).

(iii) New intensive farming *land*[^] use activities must be regulated throughout the Region to achieve the nitrogen leaching maximums specified in (i).

(b) **Faecal contamination**

- (i) Those persons carrying out existing intensive farming *land*[^] use activities in the targeted *Water Management Sub-zones*^{*} listed in Table 14.1 or new conversions to intensive farming *land*[^] use activities anywhere in the Region must be required, amongst other things, to:
 - (A) prevent cattle access to some surface *water bodies*[^] and their *beds*[^]
 - (B) mitigate faecal contamination of surface *water*[^] from other entry points (eg., ~~face~~ run-off from races, feed pads and paddocks)
 - (C) establish programmes for implementing any required changes.

(c) **Sediment**

- (i) In those *Water Management Sub-zones*^{*} where agricultural *land*[^] use activities are the predominant cause of elevated sediment levels in surface *water*[^], the Regional Council will promote the preparation of voluntary management plans under the Council's Sustainable Land Use Initiative or Whanganui Catchment Strategy for the purpose of reducing the risk of *accelerated erosion*^{*}, as described in Chapter 4.

(d) **Good management practices***

- (i) All intensive farming *land*[^] use activities must be regulated to, as a minimum, implement *good management practices** to ~~manage~~ **minimise the risk of** nutrient leaching and run-off, faecal contamination, and sediment losses. ~~in accordance with good management practices*.~~

Commented [CRL7]: F&G (7.11).

Method 5-12 Innovative Land Use Research	
Description	Support initiatives by local communities, sector groups or tangata whenua which develop options for sustainable land use in the Region. Support for work in <i>Water Management Sub-zones*</i> where nitrogen leaching is an issue, as identified in Table 14.1, will be a priority in order to find viable options (including nitrogen loss leaching mitigation options) for intensive farming land users that will have difficulty in reducing the risk of nitrogen leaching loss to the extent necessary to achieve the nitrogen-leaching maximums-limits specified in the One Plan rules. achieving the cumulative nitrogen leaching maximums* (refer Table 14.1). Horizons will provide assistance through providing data and information that will assist in the identification and evaluation of innovative nitrogen loss leaching mitigations or land use options and participating in any evaluative work as appropriate.
Who	Local communities, including tangata whenua, rural and other sector groups, Territorial Authorities, and Regional Council (in consultation with tangata whenua).
Links to Policy	This method implements Policies 5-7 and 5-8.
Target	Advice and assistance is available for landowners and tangata whenua in the Region regarding land use management practices.

Method 5-13	Provision of Information
Description	Horizons will collate and publish information regarding Overseer version changes and the identification and evaluation of nutrient management models and nitrogen leaching loss risk assessment methods other than Overseer that may be more appropriate for calculation of the effects of risk of on-farm nutrient losses when considering applications for consent and in compliance monitoring. Horizons will register and maintain Overseer files for synthetic farm systems simulating the range of intensive farming land uses regulated under the One Plan. Horizons will make publicly available the estimated nitrogen leaching loss values for those synthetic farm systems, including values amended by Overseer version updates. Horizons will have regard to the impact of Overseer version updates, (as demonstrated by changes in the estimated nitrogen leaching loss values of the synthetic farms over time), when considering applications for consent for IFLU activities and in compliance monitoring.
Who	Regional Council, tangata whenua, rural sector groups, and nutrient management model providers.
Links to Policy	This method implements Policy 5-8.
Target	- Horizons will update Table 14.2 consider whether it needs to respond to changes in Overseer through a plan change process (where necessary) and will provide clarification within the One Plan of the methodology used to establish the Cumulative Nitrogen Leaching Maximums* in Table 14.2. Horizons will maintain representative Overseer farm system reference files and make their base files and nitrogen leaching loss estimates available on its website. - Horizons will recognise the impact of Overseer version upgrades when <u>comparing the outputs from future versions of Overseer with Table 14.2 CNLM values and with nitrogen leaching limits specified in consent conditions, to ensure comparability between Overseer estimates over time.</u> <u>A list of nutrient management models appropriate for use in intensive farming land is maintained on Horizons' website.</u>

Commented [CRL8]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Commented [CRL9]: Consequential to change above. Deletion is proposed as the remaining text encompasses the regular provision / publication of Overseer update data and the Regional Council having regard to that.

Commented [CRL10]: As directly above.

Policy 14-3: ~~Industry-based standards~~ Good management practices*

When making decisions on *resource consent*[^] applications, and setting consent conditions, for activities affecting groundwater and surface *water*[^] quality, ~~the Regional Council must~~ require the implementation of *have regard to good management practices**, and additional measures ~~to reduce for decreasing~~ nitrogen leaching, will examine on an on-going basis relevant industry-based standards (including guidelines and codes of practice), recognising that such industry-based standards generally represent current best practice, and may accept compliance with those standards as being adequate to avoid, remedy or mitigate adverse effects[^] to the extent that those ~~standards~~ *good management practices** and measures address the matters in Policies 14-1, 14-2, 14-4, ~~and~~ 14-5 and 14-6 and contribute to decreasing contaminant loads in the relevant *water management sub-zone*^{*}.

Commented [CRL11]: F&G (7.6 and 7.11).

Policy 14-5: Management of intensive farming *land*[^] uses

In order to give effect to Policy 5-7 and Policy 5-8, intensive farming *land*[^] use activities affecting groundwater and surface *water*[^] quality must be managed in the following manner:

- (a) The following land uses have been identified as intensive farming *land*[^] uses:
 - (i) *Dairy farming**
 - (ii) *Commercial vegetable growing**
 - (iii) *Cropping**
 - (iv) *Intensive sheep and beef**
- (b) The intensive farming *land*[^] uses identified in (a) must be regulated where:
 - (i) They are existing (~~ie., established prior to the Plan having legal effect~~) intensive farming *land*[^] uses (i.e. established prior to the date specified in Table 14.1 on which Rule 14-1 had legal effect²), in the targeted *Water Management Sub-zones*^{*} identified in Table 14.1¹.
 - (ii) They are new (~~ie. established after the Plan has legal effect¹~~) intensive farming *land*[^] uses, in all any *Water Management Sub-zones*^{*} in the Region (that is, established after the date the Plan had legal effect, which is 24 August 2010 for *dairy farming*^{*} and 9 May 2013 for *commercial vegetable growing*^{*}, *cropping*^{*} and *intensive sheep and beef*^{*3}).
- (c) Nitrogen leaching maximums have been established in Table 14.2.
- (d) ~~Except as provided for in Policy 14-6(d), Existing intensive farming *land*[^] uses regulated in accordance with (b)(i) must be managed to ensure that the risk of leaching of nitrogen from those *land*[^] uses does not exceed one of the limits parameters specified in (i), (ii) or (iii) below:~~
 - i. ~~the cumulative nitrogen leaching maximum* values for each year contained in Table 14.2, unless the circumstances in Policy 14-6 apply; or~~
 - ii. The nitrogen leaching risk * calculated in accordance with Schedule [X]; or
 - iii. the lesser of 80% of the land's nitrogen leaching baseline* or the 75th percentile nitrogen leaching loss for the relevant water management zone*; or

² ~~The Plan has legal effect in the case of existing intensive farming *land*[^] uses in these zones from the dates identified in Table 14.1. The third column of Table 14.1 specifies the date on which the Plan had legal effect in relation to Rule 14-1 in the targeted *Water Management Sub-zones*^{*}.~~

³ ~~As explained in footnote 3 to Table 14.1, the Plan has legal effect in the case of *dairy farming*^{*} from 24 August 2010 and for *commercial vegetable growing*^{*}, *cropping*^{*} and *intensive sheep and beef*^{*} it has legal effect from 9 May 2013 for the purpose of regulating new intensive farming *land*[^] use activities under Rules 14-3 and 14-4.~~

- iii. ~~for commercial vegetable growing*, the nitrogen leaching risk* calculated in accordance with Schedule [Y] and the growing area does not exceed the area of commercial vegetable growing* of the baseline growing period*; and the activity implements good management practice* and best management practice* to achieve, within 3 years of lodgement of the application, a minimum reduction in cumulative nitrogen leaching loss from the land^ of 35% relative to the baseline growing period*;~~
- iv. ~~provided that, in (ii) and (iii) above, the application for consent is lodged no later than 31 December 2022. [the date that is twelve months from the date on which PC2 becomes operative] and the mitigations proposed in the application to reduce nitrogen leaching risk are implemented within two years of the date of the grant of consent.~~
- (e) New intensive farming land^ uses regulated in accordance with (b) (ii) must be managed to ensure that the leaching of nitrogen from those land^ uses does not exceed the cumulative nitrogen leaching maximum* values for each year contained in Table 14.2.
- (f) Intensive farming land^ uses regulated in accordance with (b) must exclude cattle from:
 - (i) A wetland^ or lake^ that is a rare habitat*, threatened habitat* or at-risk habitat*.
 - (ii) Any river^ that is permanently flowing or has an active bed* width greater than 1 metre.
- (g) All places where cattle cross a river that is permanently flowing or has an active bed* width greater than 1 metre must be culverted or bridged and those culverts or bridges must be used by cattle whenever they cross the river.

Commented [CR112]: For benefit of parties this version corrects an inadvertent deletion that was carried through into the version previously circulated to the parties (relating to baseline growing area only).

Commented [CRL13]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Policy 14-6: Resource consent decision-making for intensive farming land^ uses

When making decisions on resource consent^ applications, and setting consent conditions^, for intensive farming land^ uses the Regional Council must:

- (a) Ensure the nitrogen leaching from the land^ is managed in accordance with Policy 14-5.
- (b) ~~Ensure~~ Require implementation of good management practices*, and additional measures where necessary, to manage the risk of nutrient leaching and run-off, faecal contamination and sediment loss, as part of any intensive farming land^ use.
An exception may be made to (a) for existing intensive farming land^ uses in the following circumstances:
 - (i) ~~where the existing intensive farming land^ use occurs on land that has 50% or higher LUC Classes IV to VIII and has average annual rainfall of 1500mm or greater; or~~
 - (ii) ~~where the existing intensive farming land^ use cannot meet year 1 cumulative nitrogen leaching maximums* in year 1, they shall be managed through conditions on their resource consent to ensure year 1 cumulative nitrogen leaching maximums* are met within 4 years.~~

Where an exception is made to the cumulative nitrogen leaching maximum* the existing intensive farming land^ uses must be managed by consent conditions to ensure:

 - (i) ~~Good management practices to minimise the loss of nitrogen, phosphorus, faecal contamination and sediment are implemented.~~

- (ii) ~~Any losses of nitrogen, which cannot be minimised, are remedied or mitigated, including by other works or environmental compensation. Mitigation works may include but are not limited to, creation of wetland and riparian planted zones.~~
- (c) Ensure that cattle are excluded from surface ~~water~~ water[^] in accordance with Policy 14-5 (f) and (g) except where landscape or geographical constraints make stock exclusion impractical. ~~and the effects of cattle stock movements are must be avoided, remedied or mitigated.~~ In all cases, the effects of any unavoidable losses of nitrogen, phosphorus, faecal contamination and sediment are must be avoided remedied or mitigated by other works or environmental compensation. ~~Mitigation works may include (but are not limited to) creation of wetland and riparian planted zones.~~
- (d) Provide for exceptions to (a) for existing intensive farming land[^] uses that exceed the limits parameters ~~cumulative nitrogen leaching maximum~~^{*} specified in Policy 14-5 (d) only where:
- (i) Good management practices^{*} are implemented in accordance with a nutrient management plan^{*} specifying timelines and N leaching targets, along with additional ~~innovations and measures to further reduce~~ ensure nutrient leaching and run-off, faecal contamination and sediment losses from the land[^] are reduced to the maximum reasonably practicable extent and achieved as soon as practicable reasonably feasible progressively over time; or
- (ii) The existing intensive farming land[^] use is to continue for no longer than five years in order to enable the transition to an alternative non-intensive farming land[^] use without an increase in nutrient leaching and run-off, faecal contamination and sediment losses from the land[^] over that period of time.
- (e) When determining whether to enable an existing intensive farming land[^] use to continue under (d)(i), have particular regard to:
- (i) The contribution made to the maintenance and enhancement of values held by mana whenua for the relevant catchment.
- (ii)(i) The extent of the activity's exceedance of the limits parameters specified in Policy 14-5(d) (i), (ii) or (iii) and the calculated potential contribution of the nitrogen leaching loss from the land to cumulative nitrogen leaching loss within the relevant Water Management Sub-Zone*;
- (iii)(iii) Proportionality in ensuring that the existing intensive farming land uses that have high risk of nitrogen leaching loss relative to the cumulative nitrogen leaching maximum* values limits specified in Table 14.2 relevant limit set out in Policy 14-5 (d) (i) or (ii) are required to make appropriately proportionate reductions in nitrogen leaching loss;
- (iv) For any application to exceed the limits described in Policy 14-5 (d) (i) or (ii), any rainfall record for the property (and the reliability of that record) and any farm scale assessment of the profile available water of the soils on the property.
- (v)(iii) Whether further reductions in nitrogen leaching risk are currently possible for the intensive farming land use based on available mitigation measures that have been demonstrated tested and proven to be effective at farm scale or through farm system modelling, optimisation and analysis of marginal costs and benefits that to determine the range of leaching reductions practicable for the farm system; available existing technologies;

Commented [CRL14]: F&G (7.11).

Commented [CRL15]: Ngāti Turanga (Heading 1.2).

Commented [CRL16]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Commented [CRL17]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Commented [CRL18]: Addition to meet request of appellants through planning expert conferencing. However, change for clarity and certainty, not substantive effect.

Commented [CRL19]: This change reimplements the now deleted clause (f)(iii)(D) - see below.

- (f) When determining whether to enable an existing intensive farming *land*[^] use to continue under (d)(i) or (ii), also have regard to:
- (i) Whether the proposed *good management practices*^{*} innovations and mitigation measures proposed to manage the risk of nutrient leaching and run-off, faecal contamination and sediment losses from the *land*[^] represent the *best practicable option*[^] to minimise these contaminants, nutrient leaching and run-off, faecal contamination and sediment losses from the *land*[^], having regard to:
 - (i) The feasibility, practicality and financial implications of implementing alternative measures that could achieve the *parameters limits* described in Policy 14-5(d);
 - (B) The extent of the exceedance of the *cumulative nitrogen leaching maximum*^{*} in Table 14.2;
 - (ii) The *predicted reduction in risk of nitrogen leaching, rate of reduction of nitrogen loss* towards the *limits parameters* described in Policy 14-5(d); *cumulative nitrogen leaching maximum*^{*} for any given year in Table 14.2;
 - (D) Whether further reductions are currently possible for the intensive farming *land*[^] use based on available mitigation measures that have been tested and proven to be effective at farm scale or through farm system modelling, optimisation and analysis of marginal costs and benefits that determines the range of leaching reductions available existing technologies;
 - (iii) The extent to which the non-compliance with the *cumulative nitrogen leaching maximum*^{*} specified in Table 14.2 is attributable to updates in versions of OVERSEER;
 - (iii) The nature and characteristics of the *land*[^], including *land use capability class*^{*} and productive capability, ~~having regard to~~ physical characteristics of the soil including in terms of attenuation capacity, climatic conditions, and topography of the property;
 - (iv) The contribution of the progressive reduction in *risk of* nutrient leaching and run-off, faecal contamination and sediment losses from the *land*[^], over time, to the improvement of *water*[^] quality within that *Water Management Sub-zone*^{*} and the need for water quality improvement ~~need for such progressive reduction~~, by reference to any difference between current state and the relevant Schedule E targets;
 - (v) Consent duration, ensuring that ~~no consent is granted for a duration the duration is limited to a period not~~ exceeding ten years, and ~~a shorter limiting duration to less than ten years duration~~ where continued high *risk of cumulative* nitrogen leaching from the *land*[^] ~~remains is planned~~ without progressive reduction through the use of *best management practice*^{*};
 - (vi) The potential effects of nutrient leaching and run-off, faecal contamination and sediment losses from the *land*[^] on surface *water*[^] and groundwater receiving environments, recognizing the state, sensitivity and absorptive capacity of the receiving environment and of downstream lakes and wetlands;
 - (vii) The surface *water*[^] management values for the relevant *Water Management Sub-zone*^{*}, including the values described in Schedule B and in any relevant treaty settlement documents;
 - (viii) The strategy for surface *water*[^] quality set out in Policies 5-2, 5-3, 5-4 and 5-5, and the strategy for groundwater quality in Policy 5-6;

Commented [CRL20]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Commented [CRL21]: Former clause (D) has been incorporated into the list of matters to be given particular regard under 14-6(e)(v) to retain its substantive effect from the decisions version, despite the surrounding changes to Policy 14-6(e).

Commented [CRL22]: F&G (7.11).

Commented [CRL23]: F&G (7.6.2 and fn 3). Note also Part 5, Schedule 12 RMA (added by the Natural and Built Environments Act 2023).

- (ix) The operational crop rotation requirements of *commercial vegetable growing** necessary to avoid soil-borne diseases and maintain crop health;
 - (x) The importance of maintaining food security for New Zealanders to support community well-being;
 - (xi) The **scale and likelihood of** potential benefits of off-site mitigation measures to address adverse effect of nutrient leaching and run-off, faecal contamination and sediment losses on *water*[^] quality in the *surface water management sub-zone**.
- (g) When determining whether to enable the existing intensive farming land[^] use to continue under (d) (ii), have regard to:
- (i) measures implemented in accordance with a nutrient management plan* to ensure that nutrient leaching and run-off, faecal contamination and sediment loss from the land[^] do not increase over the duration of the resource consent[^];
 - (ii) good management practices* and additional measures that are proposed to avoid, remedy or mitigate the risk of nutrient leaching and run-off, faecal contamination and sediment losses from the land[^];
 - (iii) the measures or arrangements necessary, including the nature, timing and sequencing, ~~measurability and enforceability~~ of any steps required, to ensure ~~proposed to~~ transition out of the intensive farming use of the land[^] ~~use~~ by the date of expiry of the *resource consent*[^] and to prevent resumption of that intensive farming activity on the land[^].

Commented [CR124]: Addition to meet request of appellants through planning expert conferencing.

14.1 Rules – Agricultural Activities

Table 14.1 sets out the target *Water Management Sub-zones** where management of existing intensive farming *land*⁴ use activities must be specifically controlled.

Table 14.1 Targeted *Water Management Sub-zones**

Catchment	<i>Water Management Sub-zone</i> *	Date the Rules of the Plan have legal effect ⁴ in relation to Rule 14-1
Mangapapa	Mangapapa Mana_9b	1 July 2014
Waikawa	Waikawa West_9a Manakau West_9b	1 July 2014
Other south-west catchments (Papaitonga)	Lake Papaitonga West_8	1 July 2014
Mangatainoka	Upper Mangatainoka Mana_8a Middle Mangatainoka Mana_8b Lower Mangatainoka Mana_8c Makakahi Mana_8d	1 July 2015
Other coastal lakes	Northern Manawatu Lakes West_6 Kaitoke Lakes West_4 Southern Wanganui Lakes West_5	1 July 2015
Coastal Rangitikei	Coastal Rangitikei Rang_4	1 July 2015
Lake Horowhenua	Lake Horowhena Hoki_1a	1 July 2015

⁴ The Plan has legal effect in the case of *dairy farming** from 24 August 2010 and for *commercial vegetable growing**, *cropping** and *intensive sheep and beef** it has legal effect from 9 May 2013.

Catchment	Water Management Sub-zone*	Date the Rules of the Plan have legal effect ⁴ in relation to Rule 14-1
	Hokio Hoki_1b	
Upper Manawatu above Hopelands	Upper Manawatu Mana_1a Mangatewainui Mana_1b Mangatoro Mana_1c Weber-Tamaki Mana_2a Mangatera Mana_2b Upper Tamaki Mana_3 Upper Kumeti Mana_4 Tamaki-Hopelands Mana_5a Lower Tamaki Mana_5b Lower Kumeti Mana_5c Oruakeretaki Mana_5d Raparapawai Mana_5e	1 July 2016
Manawatu above gorge	Hopelands-Tiraumea Mana_6 Upper Gorge Mana_9a Mangaatua Mana_9c	1 July 2016

Table 14.2 sets out the *cumulative nitrogen leaching maximum** for the *land^* used for intensive farming *land^* use activities within each specified *land use capability class**. ~~The *cumulative nitrogen leaching maximum** values in Table 14.2 were derived using Overseer® 6.2.3.~~

Commented [CR125]: Overseer has been further updated since decisions version. See Day 8.2 as to the update of Table 14.2 figures - this matter will be addressed in evidence.

Table 14.2 Cumulative nitrogen leaching maximum* by Land Use Capability Class*								
Period (from the year that the rule has legal effect ⁴)	LUC* I	LUC* II	LUC* III	LUC* IV	LUC* V	LUC* VI	LUC* VII	LUC* VIII
Year 1	51 30	45 27	40 24	29 18	25 16	24 15	11 8	3 2
Year 5	46 27	42 35	35 21	26 16	20 13	16 10	8 6	3 2
Year 10	44 26	37 22	32 19	23 14	20 13	16 10	8 6	3 2
Year 20 (applies to new intensive farming <i>land^</i> use activities only)	43 25	35 21	30 18	21 13	19 12	16 10	8 6	3 2

Table 14.2A 75th Percentile leaching rates by targeted Water Management Sub-zone*		
Catchment	Water Management Sub-zone*	Maximum nitrogen leaching loss rate (kg N/ha/year)

Commented [CRL26]: This deletion is consequential to the insertion of Tables 14.2A and 14.2B below.

Coastal Rangitikei	Rang_4	32
West Coast lakes, Lake Horowhenua, other coastal lakes	Hoki_1a, 1b; West_4; West_5; West_6; West_8; West_9a, 9b	35
Upper Manawatu and Weber-Tamaki (upstream of Tamaki confluence)	Mana_1a, 1b, 1c; Mana_2a, 2b	45
Other Upper Manawatu (Upper Tamaki, Tamaki-Hopelands, Upper Kumeti, Hopelands-Tiraumea, Upper Gorge)	Mana_3; Mana_4; Mana_5a, 5b, 5c, 5d, 5e; Mana_6; Mana_9a, 9b, 9c	45
Mangatainoka	Mana_8a, 8b, 8c, 8d	49

Table 14.2A: Nitrogen Leaching Risk Limits* - Pastoral

The following are the *nitrogen leaching risk limits** for pastoral intensive farming *land*[^] use activities for the purposes of Rule 14-1 and Schedule [Z]:

Rainfall	Profile Available Water		
	151-350mm	61-150mm	0-60mm
Rainfall 1 <1000 mm/year	180	180	130
Rainfall 2 1000-1300 mm/year	180	150	120
Rainfall 3 1300-1600 mm/year	150	130	110

Commented [CRL27]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Rainfall 4 >1600 mm/year	150	120	110
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Table 14.2B: Nitrogen Leaching Risk Limits* - Commercial Vegetable Growing

The following are the *nitrogen leaching risk limits** for commercial vegetable growing activities for the purposes of Rule 14-1 and Schedule [Z]. The limits prescribed in Table 14.2B apply to both the nitrogen fertiliser practices described in Topic 1 and the soil health practices described in Topic 2 of Schedule [Y]. For the purposes of Rule 14-1, the *nitrogen leaching risk** of the activity must not exceed the largest number of the range specified in Table 14.2B.

	Profile Available Water		
Rainfall	151-350mm	61-150mm	0-60mm
Rainfall 1 <1000 mm/year	21 - 40	21 - 40	-
Rainfall 2 1000-1300 mm/year	21 - 40	21 - 40	-
Rainfall 3 1300-1600 mm/year	-	-	-
Rainfall 4 >1600 mm/year	-	-	-

Commented [CRL28]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
14-1 Existing intensive farming land[^] use activities	The use of <i>land[^]</i> pursuant to s9(2) RMA for any of the following types of intensive farming: (i) <i>dairy farming*</i> (ii) <i>commercial vegetable growing*</i> (iii) <i>cropping*</i> (iv) <i>intensive sheep and beef farming*</i> that was existing in the <i>Water Management Sub-zones*</i> listed in and from the dates specified in Table 14.1 and any of the following <i>discharges[^]</i> pursuant to ss15(1) or 15(2A) RMA associated with that intensive farming: (a) the <i>discharge[^]</i> of <i>fertiliser*</i> onto or into <i>land[^]</i> (b) the <i>discharge[^]</i> of <i>contaminants[^]</i> onto or into <i>land[^]</i> from (i) the preparation, storage, use or transportation of stock feed on <i>production land[^]</i>	Controlled	a) <u>The existing intensive farming <i>land[^]</i> use was not granted a resource consent under Rule 14-1 or Rule 14-2 of this Plan prior to 22 July 2019.</u> b) A <i>nutrient management plan*</i> must be prepared for the <i>land[^]</i>, and provided annually to the Regional Council <u>with the application for resource consent[^] and thereafter as required by any condition of resource consent[^].</u> c) The activity must be undertaken in accordance with the <i>nutrient management plan*</i> prepared under (a) <u>(b)</u>. d) The <i>nutrient management plan*</i> prepared under (a) <u>(b)</u> must demonstrate that the nitrogen leaching loss from the activity will: <u>(i) the nitrogen leaching loss from the activity will not exceed the cumulative nitrogen leaching maximum* specified in Table 14.2; or</u> <u>(ii) the nitrogen leaching risk for loss from the activity will not exceed the nitrogen leaching risk limit specified in Schedule [X] (for pastoral farming) or Schedule [Y]</u>	Control is reserved over: (a) the <u>contents</u>, implementation and review of the <i>nutrient management plan*</i> <u>for the <i>land[^]</i></u> (b) compliance with the cumulative nitrogen leaching maximum* specified in Table 14.2 the nitrogen leaching loss from the <i>land[^]</i> and the good management practices* and best management practices* (and additional measures where necessary) to limit nitrogen leaching loss from the <i>land[^]</i> to the rate specified in condition (d) and to avoid, remedy or mitigate nutrient leaching and run-off, faecal contamination and sediment losses from the <i>land[^]</i> (b) the matters of control in Rule 14-11

Commented [CRL30]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	(ii) the use of a <i>feedpad</i>* (c) the <i>discharge</i>^ of <i>grade Aa biosolids</i>* or <i>compost</i>* onto or into <i>production land</i>^ (d) the <i>discharge</i>^ of <i>poultry farm litter</i>* onto or into <i>production land</i>^ (e) the <i>discharge</i>^ of farm <i>animal effluent</i>* onto or into <i>production land</i>^ (or upon expiry or surrender of any existing consent for that <i>discharge</i>^) including: (i) effluent from dairy sheds and <i>feedpads</i>* (ii) effluent received from piggeries (iii) sludge from farm effluent ponds (iv) poultry farm effluent and any ancillary <i>discharge</i>^ of <i>contaminants</i>^ into air pursuant to ss15(1) or 15(2A) RMA. Where the existing intensive farming <i>land</i>^ use is located partly on land within one or		(for commercial vegetable growing); and a rate that is the lesser of: a. 80% of the nitrogen leaching baseline* of the land^ (which must be achieved by 31 December 2022) and b. the nitrogen leaching loss specified for the relevant Surface Water Management Sub-zone* in Table 14.2A; or (iii) for commercial vegetable growing*, the growing area does not exceed the baseline growing area*; and, within 3 years of lodgment of the application, the activity will achieve a minimum reduction in cumulative nitrogen leaching loss from the land^ of 35% relative to the baseline growing period*; (iv) provided that under for the purpose of (d) (ii) and (iii) above, the application for consent is lodged no later than [the date that is twelve months from the date on which PC2 becomes operative] and the mitigations proposed in the application to	(c) avoiding, remedying or mitigating the effects of odour, dust, <i>fertiliser</i>* drift or effluent drift (d) provision of information including the <i>nutrient management plan</i>* (e) duration of consent (f) review of consent <i>conditions</i>^ (g) compliance monitoring and reporting (h) the matters in Policies 14-5, 14-6 and 14-9. <i>Resource consent</i>^ applications under this <i>rule</i>^ will not be notified and written approval of affected persons will not be required (notice of applications need not be served^ on affected persons).

Commented [CRL31]: F&G (7.5-7.6, 7.11-7.12).

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	more of the <i>water management sub-zones</i>* listed in Table 14.1 and partly on other land, this rule only applies: (a) if at least 20% of the existing intensive farming <i>land</i>[^] use is located on land within the listed <i>water management sub-zones</i>*; and (b) to the portion of the existing intensive farming <i>land</i>[^] use that is located within the listed <i>water management sub-zones</i>*.		<u>reduce nitrogen leaching risk will be implemented within two years of the date of the grant of consent. 31 December 2022</u> e) Cattle must be excluded from: (i) <i>wetlands</i>[^] and <i>lakes</i>[^] that are a <i>rare habitat</i>* or <i>threatened habitat</i>*, and (ii) the <i>beds</i>[^] of <i>rivers</i>[^] that are permanently flowing or have an <i>active bed</i>* width greater than 1 m. f) <i>Rivers</i>[^] that are permanently flowing or have an <i>active bed</i>* width greater than 1 m, that are crossed by cattle must be bridged or culverted, and the cattle must cross via that bridge or culvert, and run-off originating from the carriageway of the bridge or culvert must be <i>discharged</i>[^] onto or into <i>land</i>[^]. g) The <i>discharge</i>[^] of <i>fertiliser</i>* onto or into <i>land</i>[^] and any ancillary <i>discharge</i>[^] of <i>contaminants</i>[^] into air must comply with the <i>conditions</i>[^] of Rule 14-5. h) The <i>discharge</i>[^] of <i>contaminants</i>[^] onto or into <i>land</i>[^] from:	

Commented [CRL29]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1).

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			(i) the preparation, storage, use or transportation of stock feed on <i>production land</i>^, or (ii) the use of a <i>feedpad</i>* and any ancillary <i>discharge</i>^ of <i>contaminants</i>^ into air must comply with the <i>conditions</i>^ of Rule 14-6. i) The <i>discharge</i>^ of <i>grade Aa biosolids</i>* or <i>compost</i>* onto or into <i>production land</i>^ and any ancillary <i>discharge</i>^ of <i>contaminants</i>^ into air must comply with the <i>conditions</i>^ of Rule 14-7. j) The <i>discharge</i>^ of <i>poultry farm litter</i>* onto or into <i>production land</i>^ and any ancillary <i>discharge</i>^ of <i>contaminants</i>^ into air must comply with the <i>conditions</i>^ of Rule 14-9. k) The <i>discharge</i>^ of farm <i>animal effluent</i>* onto or into <i>production land</i>^ including: (i) effluent from dairy sheds and <i>feedpads</i>* (ii) effluent received from piggeries (iii) sludge from farm effluent ponds (iv) poultry farm effluent and any ancillary <i>discharge</i>^ of <i>contaminants</i>^ into air must comply	

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			with the <i>conditions</i> [^] , standards and terms of Rule 14-11.	

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
14-2 Existing intensive farming land[^] use activities not complying with <u>any of the conditions, standards and terms (a), (b) and (d) to (i) (e) to (k) of Rule 14-1</u>	The use of <i>land</i> [^] pursuant to s9(2) RMA for any of the following intensive farming: (i) <i>dairy farming</i> * (ii) <i>commercial vegetable growing</i> * (iii) <i>cropping</i> * (iv) <i>intensive sheep and beef farming</i> * that was existing in the <i>Water Management Sub-zones</i> * listed in and from the dates specified in Table 14.1, and any of the following <i>discharges</i> [^] pursuant to ss15(1) or 15(2A) RMA associated with intensive farming, that do not comply with one or more of the <i>conditions</i> [^] , standards and	Restricted Discretionary	(a) A <i>nutrient management plan</i>* must be prepared for the <i>land</i>[^], and provided annually to the Regional Council. The activity must comply with the requirements specified in conditions, standards and terms (a) to (d) of Rule 14-1. (b) The activity must be undertaken in accordance with the <i>nutrient management plan</i>* prepared under (a). The activity must comply with the requirements specified in conditions, standards and terms (e) to (k) of Rule 14-1, except to the extent that consent is sought under Rule 14-2 to not comply with them. (c) The <i>nutrient management plan</i>* prepared under (a) must demonstrate that the nitrogen leaching loss from the activity will not exceed the <i>cumulative nitrogen leaching maximum</i>* for any year specified in Table 14.2.	Discretion is restricted to: (a) <u>the contents, implementation and review of the preparation of and compliance with a <i>nutrient management plan</i>* for the <i>land</i>[^]</u> (b) <u>the extent of non-compliance with the <i>cumulative nitrogen leaching maximum</i>* specified in Table 14.2</u> (b) (c) measures the nitrogen leaching loss from the <i>land</i>[^] (c) <u>the measures including <i>good management practices</i>* and <i>best management practices</i>* (and additional measures where necessary) to limit nitrogen leaching loss from the <i>land</i>[^] to the rate specified in condition (d) and</u>

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	terms of Rule 14-1 <u>(except for (a), (b) or (c))</u>: (a) the <i>discharge</i>[^] of <i>fertiliser</i>[*] onto or into <i>land</i>[^] (b) the <i>discharge</i>[^] of <i>contaminants</i>[^] onto or into <i>land</i>[^] from (i) the preparation, storage, use or transportation of stock feed on <i>production land</i>[^] (ii) the use of a <i>feedpad</i>[*] (c) the <i>discharge</i>[^] of <i>grade Aa biosolids</i>[*] or <i>compost</i>[*] onto or into <i>production land</i>[^] (d) the <i>discharge</i>[^] of <i>poultry farm litter</i>[*] onto or into <i>production land</i>[^] (e) the <i>discharge</i>[^] of farm <i>animal effluent</i>[*] onto or into <i>production land</i>[^] (or upon expiry or surrender of any existing consent for that <i>discharge</i>[^]) including:			to avoid, remedy or mitigate nutrient leaching <u>and run-off</u>, faecal contamination and sediment losses from the <i>land</i>[^] <u>(d)</u> measures to exclude cattle from <i>wetlands</i>[^] and <i>lakes</i>[^] that are a <i>rare habitat</i>[*] or <i>threatened habitat</i>[*], and <i>rivers</i>[^] that are permanently flowing or have an <i>active bed</i>[*] width greater than 1 m <u>(e)</u> the bridging or culverting of <i>rivers</i>[^] that are permanently flowing or have an <i>active bed</i>[*] width greater than 1 m that are crossed by cattle <u>(f)</u> the matters referred to in the <i>conditions</i>[^] of Rules 14-5, 14-6, 14-7, and 14-9 <u>(g)</u> the matters referred to in the <i>conditions</i>[^] of Rule 14-11 and the matters of control in Rule 14-11 <u>(h)</u> avoiding, remedying or mitigating the effects of odour, dust, <i>fertiliser</i>[*] drift or effluent drift

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	(i) effluent from dairy sheds and <i>feedpads</i> * (ii) effluent received from piggeries (iii) sludge from farm effluent ponds (iv) poultry farm effluent and any ancillary <i>discharge</i> ^ of <i>contaminants</i> ^ into air pursuant to ss15(1) or 15(2A) RMA.			(i) provision of information including the annual <i>nutrient management plan</i> * (j) duration of consent (k) review of consent <i>conditions</i> ^ (l) compliance monitoring (m) the matters in Policy <u>Policies 14-5, 14-6 and 14-9</u> .
<u>Rule 14-2A</u> <u>Existing</u> <u>intensive</u> <u>farming land</u> [^] <u>use activities</u> <u>not complying</u> <u>with</u> <u>conditions,</u> <u>standards, or</u> <u>terms (a) to (d)</u> <u>(e) of Rule 14-1</u> <u>or condition (a)</u> <u>of Rule 14-2.</u>	The use of <i>land</i> ^ pursuant to s9(2) RMA for any of the following intensive farming: (i) <u><i>dairy farming</i></u> * (ii) <u><i>commercial vegetable growing</i></u> * (iii) <u><i>cropping</i></u> * (iv) <u><i>intensive sheep and beef farming</i></u> * that was existing in the <i>Water Management Sub-zones</i> * listed in and from the dates specified in Table 14.1, and any of the following <i>discharges</i> ^ pursuant to	<u>Discretionary</u>		

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	<u>ss15(1) or 15(2A) RMA associated with intensive farming, that do not comply with conditions, standards and term (a) to (d)(e) of Rule 14.1 14-1 or condition (a) of one or more of the conditions^Δ, standards and terms of Rule 14-2.:</u> <u>(f) the discharge^Δ of fertiliser* onto or into land^Δ</u> <u>(g) the discharge^Δ of contaminants^Δ onto or into land^Δ from</u> <u>(i) the preparation, storage, use or transportation of stock feed on production land^Δ</u> <u>(ii) the use of a feedpad*</u> <u>(h) the discharge^Δ of grade Aa biosolids* or compost* onto or into production land^Δ</u> <u>(i) the discharge^Δ of poultry farm litter* onto or into production land^Δ</u>			

Rule	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
	(j) the discharge^Δ of farm animal effluent* onto or into production land^Δ (or upon expiry or surrender of any existing consent for that discharge^Δ) including: (i) effluent from dairy sheds and feedpads* (ii) effluent received from piggeries (iii) sludge from farm effluent ponds (iv) poultry farm effluent and any ancillary discharge^Δ of contaminants^Δ into air pursuant to ss15(1) or 15(2A) RMA.			

...

Rule Guide:

The location of archaeological sites when defined by a single co-ordinate is unlikely to define the true extent of subsurface archaeological evidence. The 50 metre rule should apply from the outer perimeter of the site.

Some activities in *rare habitats**, *threatened habitats** and *at-risk habitats** are regulated by Rules 13-8 and 13-9. Discharges from agricultural activities at other locations are regulated as follows:

- (a) **Discharges not covered by rules** - Agricultural discharges pursuant to ss15(1) RMA that are not covered by the rules above are a **discretionary activity** under Rule 14-30.

~~(b) — **Activities that do not comply** — Except for Rule 14-3, activities pursuant to ss15(1) or 15(2A) RMA that do not comply with the permitted or controlled activity rules above are a **discretionary activity** under general Rule 14-30.~~

Glossary

A term or expression that is defined in this glossary is marked with the symbol * when used in the Plan.

A term or expression that is defined in the Resource Management Act 1991 (RMA) and used in the Plan, but which is not included in this glossary, has the same meaning as in the RMA. Definitions provided in the RMA are not repeated in this glossary. A term or expression that is defined in the RMA is marked with the symbol ^ when used in the objectives, policies or rules of the Plan, this glossary and the schedules to the Plan, other than Schedules F, G and I.

When:

- * is not used to identify a term anywhere in the Plan, or
- ^ is not used to identify a term in the objectives, policies or rules of the Plan, this glossary or the schedules to the Plan

the term has its ordinary meaning.

New Definition:

Baseline Commercial Growing Area means the aggregated area of *land*[^] utilised for commercial vegetable production in the 2012/2013 growing season and includes all *land*[^] under the control (owned or leased) of a single grower or enterprise.

New Definition:

Baseline Growing Period means the 2012/2013 growing season.

New Definition:

Crop Rotation is the systematic planting of different crops in sequence over multiple years within the same growing space, or across changing and parcels, and often includes a pasture phase. This process helps maintain nutrients in the soil, reduce soil erosion, and prevents plant diseases and pests.

New Definition:

Enterprise means one or more parcels of *land*[^] held in single or multiple ownership to support the principle *land*[^] use, or *land*[^] on which the *land*[^] use is reliant, which constitutes a single operating unit for the purposes of management.

New Definition:

Nitrogen Baseline means the discharge of nitrogen below the root zone, as modelled using a recognised nutrient management model, for the period 1 July 2012 to 30 June 2013. If an updated version of the nutrient management model is to be issued, the most recent version is to be used to recalculate the nitrogen baseline using the same nitrogen related farm input data as used to calculate Table 14.2A.

Commented [CRL32]: No longer required.

New Definition:

75th Percentile Nitrogen Leaching Loss means the 75th percentile value (units of kg N/ha/year) of all of the nitrogen baseline* values for dairy farming *land*[^] use activities in the *Surface Water Management Zone** as set out in Table 14.2A.

Commented [CRL33]: No longer required.

New Definition:

Good management practices refers to ~~evolving practical~~ practicable measures and methods, including those established in industry-based standards and guidance documents, which are tailored for use ~~used~~ at a farm ~~sector or community~~ level to minimise the effects of discharges to *land*[^] and *water*[^].

New Definition:

Best Management Practices means measures, additional to *good management practices** that are tailored for a farming or growing system to minimise nitrogen leaching loss from the *land*[^] to the maximum practicable extent.

Amendment to Existing Definition:

Nutrient Management Plan means a plan prepared ~~annually~~, either:

- (a) in accordance with the Code of Practice for Nutrient Management (NZ Fertiliser Manufacturers' Research Association ~~2013~~ 2007) which records ~~(including copies of the OVERSEER input and output files of a recognised nutrient management model used to prepare the plan)~~ and takes into account all sources of nutrients, sediment and pathogens for intensive farming ~~(and includes copies of the OVERSEER input and output files of a recognised nutrient management model used to prepare the plan)~~ and identifies all ~~current~~ and relevant nutrient management practices and mitigations and which is prepared by a person who has ~~both a Certificate of Completion in Sustainable Nutrient Management in New Zealand and a Certificate of Completion in Advanced Sustainable Nutrient Management from Massey University; or~~
- (b) ~~as a component of a certified freshwater farm plan[^] prepared for the purpose of Part 9A of the Resource Management Act 1991 which records and takes into account all sources of nutrients for intensive farming (and includes copies of the input and output files of a recognised nutrient management model used to prepare the plan) and identifies all current and relevant nutrient management practices and mitigations and addresses potential sediment loss and faecal contamination.~~

Insert the following schedules in the One Plan:

Commented [CRL34]: Ngāti Turanga (Heading 2, (1)(a)); F&G (8.1). Scope for Schedules [X], [Y], and [Z] are as per their implementing provisions (Policy 14-5(d)(ii), Table 14.2A and Table 14.2B).

Schedule [X]: How to determine the *nitrogen leaching risk** of existing *intensive farming land uses**

(Pastoral farming)

Applying the Nitrogen Leaching Risk Scorecard

A pastoral farm's *nitrogen leaching risk** shall be determined by:

1. Using the Nitrogen Leaching Risk Scorecard set out below, and in accordance with the explanations and definitions provided, assigning points for the sub practices under the each of the six topics listed, to the extent they are relevant to the farming system; and
2. In the case of Topic 1 Stock Management, adjusting the Sub practice (a) points by the applicable percentage in Sub practice (c);
3. Summing the total number of Sub practice positive points and deducting the sub practice negative points for each Topic to generate 6 Topic scores; and
4. Summing all 5 Topic scores to provide a Part A aggregate Topics score; and
5. Determining what, if any, mitigations under Part B are applicable and applying the points and/or percentage adjustments applicable to the Part A aggregate Topic Score to generate the score that is *nitrogen leaching risk**.

PART A: Nitrogen Leaching Risk Scorecard - Pastoral land management practices

Topic 1: Stock Management

(a) Stock Management: Stocking Rate	Points
This sub practice addresses the number of grazed animals on the land, recognising that a high stocking rate is a key driver for increased nitrogen leaching on farm. The area (hectares) used in the calculation of the stocking rate is the effective area of the dairy farm. For the purpose of this Scorecard the effective area is the area of land used for grazing livestock (including the milking platform), cropping or as sacrifice paddocks. Dairy farm is the area of land used for <i>dairy farming*</i> . The stocking rate used for the calculation shall be the peak stocking rate . The peak stocking rate is the highest stocking rate on the farm over the 12-month period. The stock unit (su) values for farmed animals are as listed in Part C of this Schedule.	
≤ 16 su/ha	0
>16 - ≤20 su/ha	20
>20 - ≤28 su/ha	30
>28 - ≤32 su/ha	40
>32 su/ha	50
(b) Stock Management: Pasture Eaten	Points
The Scorecard moderates the stocking rate risk by assessing the total amount of dry matter eaten. It is acknowledged that stocking rate alone as a method of assessing nitrogen loss risk does not account for differences in size and age of animals, both of which will contribute to differences in total dry matter eaten. This sub practice accounts for differences in	

amount of dry matter eaten and therefore the amount of nitrogen ingested and returned to pasture as urinary N and N in excreta. The expression T DM/ha used below refers to tonnes of dry matter per hectare.	
≤ 10 T DM/ha	5
>10 – ≤12 T DM/ha	10
>12 – ≤14 T DM/ha	20
>14 – ≤16 T DM/ha	40
>16 – ≤18 T DM/ha	60
>18 T DM/ha	80
(c) Stock Management: Wintering Off the Milking Platform This sub practice moderates the stocking rate risk (sub practice (a)) by reducing the points attributed to that Sub practice. This is calculated using the percentage of time animals spend off farm between the months of May – August. For the purpose of this Scorecard, milking platform (MP) means that part of any dairy farm that is used for grazing lactating dairy cows during the milking season and includes the animal effluent disposal area. For the avoidance of doubt, it excludes land used for grazing heifers or the wintering-off of dairy cows.	Reduction of peak stocking rate points
>80 - ≤100% animals off MP	-50%
>60 - ≤ 80% animals off MP	-40%
>40 - ≤60% animals off MP	-30%
> 20 - ≤40% animals off MP	-20%
> 0 - ≤ 20% animals off MP	-10%
(d) Stock Management: Wintering Practices: This sub practice considers that extent of time stock are fed using different winter grazing practices. The risk is determined by allocating points on a pro rata basis according to the percentage of time (total hours) animals are kept on, and/or fed, using the listed systems. For the purpose of this Scorecard break feed fodder crop means feeding of stock within an area of pasture or crop- (a) within a paddock in which the fence is moved regularly to allow the stock to graze another area of pasture or crop within the paddock; or (b) within a paddock that is subdivided into cells or grid using temporary fencing; and where the stock as moved regularly. An extensive fodder crop means a form of grazing on crop that is not break feed fodder crop. Barn or wintering pad means any hard structure used for feeding livestock from which effluent is captured and directed to an authorised effluent management system.	Points
Off pasture (barn or wintering pad)	-40
On pasture	0
Extensive fodder crop	20
Break feed fodder crop	40

Topic 2: Nitrogen Fertiliser:

(a) Nitrogen Fertiliser: Total N	Points
This sub practice assesses the level of risk associated with nitrogen fertiliser application. The total amount of nitrogen used per annum is the main driver for the nitrogen management risk factor. This is calculated by summing the total amount of nitrogen fertiliser applied annually (kg / ha) across the effective area .	
N Fertiliser applied ≤ 50 kg/ha	0
N Fertiliser applied $>50 - \leq 100$ kg/ha	10
N Fertiliser applied $>100 - \leq 150$ kg/ha	30
N Fertiliser applied $>150 - \leq 175$ kg/ha	50
N Fertiliser applied $>175 - \leq 200$ kg/ha	60
N Fertiliser applied $>200 - \leq 225$ kg/ha	70
N Fertiliser applied $>225 - \leq 250$ kg/ha	90
N Fertiliser applied $>250 - \leq 300$ kg/ha	150
N Fertiliser applied >300 kg/ha	200
(b) Nitrogen Fertiliser: Conversion Efficiency	Points
The conversion efficiency calculates how many kilograms of milk solids are produced per kilogram of nitrogen (N) applied. This sub factor is calculated by simply dividing the total amount of milk solids (kg MS) produced by the total kilograms of nitrogen applied via fertiliser.	
kgMS/kgN Fertiliser >25	-40
kgMS/kgN Fertiliser $>13 - \leq 25$	-20
kgMS/kgN Fertiliser $>9 - \leq 13$	0
kgMS/kgN Fertiliser $>5 - \leq 9$	20
kgMS/kgN Fertiliser ≤ 4.5	40
(c) Nitrogen Fertiliser: Timing of Application:	Points
This sub practice assesses the timing of application of nitrogen fertilisers (which influences nitrogen leaching). The scoring of this sub practice works by grouping each of the farm's nitrogen (N) fertiliser applications into one of the three time periods and recording the highest score of those time periods. (That is, if fertiliser is applied in May -June and in September to April, then this sub practice will attract 40 points).	
N Fertiliser applied September – April	-10
N Fertiliser applied July - August	20
N Fertiliser applied May - June	40
(d) Nitrogen Fertiliser: Average Monthly Application Rates	Points
This sub practice calculates the average amount of N applied in any given month to a block by summing all monthly fertiliser applications. Total nitrogen applied is then divided across the block(s) it was applied to. For example, where an N fertiliser application is applied to multiple blocks in a month, the application is to be pro-rata across the blocks it was applied to. This is necessary because Product A (20% Nitrogen) could be applied every month across Block 1 and Block 2 but Product B (46% Nitrogen) was applied every month across Block 1 only.	

Highest N fertiliser applied is $\leq$ 25 kg/ha	-20
Highest N fertiliser applied is $>$ 25 kg/ha	0

Topic 3: Effluent Management

(a) Effluent Management: Storage	Points
This sub practice is scored according to the extent to which the recommend effluent storage capacity is installed. It is expressed as percentage of the storage calculated using the Dairy Effluent Storage Calculator (DESC). Although the scoring scale provided below in increments 10%, scores should be allocated in accordance with a sliding scale from 0 to 100 based on the percentage of required storage that is provided. That is, if a farm has 95% of the required storage it will attract 5 risk points. The DESC may be accessed at: https://www.dairynzdesc.co.nz	
100% storage	0
90% storage	10
80% storage	20
70% storage	30
60% storage	40
50% storage	50
40% storage	60
30% storage	70
20% storage	80
10% storage	90
No storage	100
(b) Effluent Management: Discharge Application Depth:	Points
The application depth is the volume of effluent discharged to soil. It is measured as the depth following a single effluent irrigation cycle. For the purpose of this scorecard High risk soils and Low risk soils are as described at: https://www.horizons.govt.nz/HRC/media/Media/Soil-Risk-list.pdf	
High risk soils + $\leq$ 10mm	0
High risk soils + $>$ 10mm	20
Low risk soils + $\leq$ 24mm	0
Low risk soils + $>$ 24mm	20
(c) Effluent Management: Disposal Area Without a Feed Pad	Points
The sub practice is scored according to the sufficiency of the effluent disposal area for the farm system. It is calculated simply as the area (hectares) of effluent disposal area per hundred cows, or part thereof. For the purpose of this Scorecard, a feed pad is an area of hard surface used for the regular supplementary feeding and loafing of cattle where the animal effluent is collected for disposal to land in accordance with the rules of this regional plan.	
Disposal area $>$ 4 ha/100 cows (no feed pad)	0

Disposal area >3 – ≤4 ha/100 cows (no feed pad)	10
Disposal area >2 – ≤3 ha/100 cows (no feed pad)	20
Disposal area ≥1 – ≤2 ha/100 cows (no feed pad)	30
Disposal area <1 ha/100 cows (no feed pad)	40
(d) Effluent Management: Disposal Area With a Feed Pad	Points
Disposal area >7ha/100 cows (with feed pad)	0
Disposal area >5 – ≤7 ha/100 cows (with feed pad)	10
Disposal area >3 – ≤5 ha/100 cows (with feed pad)	20
Disposal area ≥1 – ≤3 ha/100 cows (with feed pad)	30
Disposal area <1 ha/100 cows (with feed pad)	40

Topic 4: Imported Feed

(a) Imported N: Total Imported N This sub practice is scored according to the total amount of nitrogen (N) introduced to the farm via all imported supplementary feed divided by the effective area of the farm. The N content of feed can be found at: https://www.dairynz.co.nz/feed/supplements/feed-values/ For the purpose of this Scorecard, imported supplementary feed means any animal feed supplied to animals on a dairy farm that is not grown on that dairy farm.	Points
Total imported N from feed ≤ 40 kg/ha	0
Total imported N from feed >40 – ≤80 kg/ha	20
Total imported N from feed >80 – ≤120 kg/ha	40
Total imported N from feed >120 – ≤160 kg/ha	60
Total imported N from feed > 160 kg/ha	80
(b) Imported N: Average N Content of Imported Supplements This sub practice is scored according to the average N content of the imported supplementary feed. The average % of nitrogen in the total amount of imported supplementary feed is calculated on a pro rata basis.	Points
Imported Feed with average N % ≤ 1.0	0
Imported Feed with average N % >1.0 - ≤ 1.5	3
Imported Feed with average N % >1.5 - ≤ 1.75	6
Imported Feed with average N % >1.75- ≤ 2.0	9
Imported Feed with average N % >2.0 - ≤ 2.25	12
Imported Feed with average N % >2.25 - ≤ 2.5	15
Imported Feed with average N % >2.5 - ≤ 3.0	18
Imported Feed with average N % > 3.0	20
(c) Imported N: Conversion Efficiency This sub practice calculates the conversion efficiency of nitrogen (N) introduced via imported supplementary feed to product. This measures the efficiency of nitrogen from imported supplementary feed converted into kilograms of milk solids (kg MS).	Points

Kg MS / Kg N from supplements: >50	-40
Kg MS / Kg N from supplements: >30 – ≤50	-20
Kg MS / Kg N from supplements: >20 – ≤30	0
Kg MS / Kg N from supplements: >10 – ≤20	20
Kg MS / Kg N from supplements: ≤10	40

Topic 5: Cropping and Cultivation

(a) Cropping and Cultivation: Minimum Tillage This sub practice assesses the risk of release of mineral nitrogen resulting from cultivation. The total percentage of the farm cultivated using minimum tillage is calculated as the area of minimum tillage divided by the total effective area of the farm.	Points
≤2% of farm cultivated annually	0
>2% – ≤4% of farm cultivated annually	5
>4% – ≤6% of farm cultivated annually	10
>6% – ≤8% of farm cultivated annually	15
>8% – ≤10% of farm cultivated annually	20
>10% – ≤15% of farm cultivated annually	30
>15% – ≤20% of farm cultivated annually	40
>20% of farm cultivated annually	50
(b) Cropping and Cultivation: Conventional Cultivation This sub practice assesses the risk of nitrogen leaching associated with conventional cultivation. The total percentage of the farm cultivated using conventional cultivation is calculated as the conventionally cultivated area divided by the total effective area of the farm.	Points
>0 - 2% of farm cultivated annually	10
>2% – ≤4% of farm cultivated annually	20
>4% – ≤6% of farm cultivated annually	30
>6% – ≤8% of farm cultivated annually	40
>8% – ≤10% of farm cultivated annually	50
>10% – ≤15% of farm cultivated annually	70
>15% – ≤20% of farm cultivated annually	90
>20% of farm cultivated annually	120
(c) Cropping and Cultivation: Season of Forage Crop Grazing This sub practice considers the higher risk of leaching associated with winter harvesting. The season of grazing is taken directly from the harvest date recorded for each crop.	Points
Crop grazing (summer) 1 October – 31 March	-30
Crop grazing (winter) 1 April – 30 September	30
(d) Cropping and Cultivation: Fertiliser Applied in Winter This sub practice considers whether nitrogen fertiliser is applied to crops during high-risk winter months.	Points

No fertiliser applied during 1 May to 31 August	0
Fertiliser applied during 1 May to 31 August	30

PART B - Pastoral Farming Mitigations

(a) Constructed Wetlands	Reduction in overall risk score
Points are deducted based on the catchment area that drains to any constructed wetland on a dairy farm. A constructed wetland is a wetland that has been deliberately constructed to intercept surface and/or subsurface contaminant flows.	
The reference to 'catchment area' below is to the area of the farm that drains to the constructed wetland	
0.5% of the catchment area	-5
1% of the catchment area	-12.5
2% of the catchment area	-18
3% of the catchment area	-21
4% of the catchment area	-24.5
5% of the catchment area	-26
(b) Plantain: % of dry matter in diet (by mass over summer and autumn)	Reduction in overall risk score
≤10% of feed	0
>10 – ≤20% of feed	-10%
>20 – ≤30% of feed	-20%
>30% of feed	-30%

PART C: Stock unit equivalents

	Breed	Stock Unit Equivalent (SU)
Milking	Friesian/Jersey Cross	8
Milking	Ayrshire	6.7
Milking	Friesian	8.5
Milking	Jersey	6.5
Milking	Other	8
Replacements	Friesian/Jersey Cross	4.2
Replacements	Ayrshire	3.6
Replacements	Friesian	4.5
Replacements	Jersey	3.5
Replacements	Other	4.3
Calves_to_Weaning		2
Breeding_Bulls		5.5

	Breed	Stock Unit Equivalent (SU)
Sheep - Ewe		1
Sheep - Ram		0.8
Sheep - Lamb		0.7
Deer - Fawn		1.2
Deer - Yearling		1.8
Deer - Stag		2.2
Deer - Hind		2
Dairy - Carryover		5.5
Beef - Bull		5.5
Beef - Cow		5.5
Beef - Calf		3.5
Beef - Yearling		3.5
Goat - Kids		0.6
Goat - Adult		0.8
Horse		11
Pony		7
Alpaca - Adult		0.7
Alpaca - Cria		0.4
Llama - Adult		1.8
Llama - Cria		1
Pig		1.6

Schedule [Y]: How to determine the *nitrogen leaching risk of existing *intensive farming land uses** (Commercial Vegetable Growing*)**

Applying the Nitrogen Leaching Risk Scorecard

The *nitrogen leaching risk** of *commercial vegetable growing** shall be determined by:

1. Using the Nitrogen Leaching Risk Scorecard set out below, and in accordance with the explanations and definitions provided, assigning points for the sub practices under the each of the two topics listed, to the extent they are relevant to the vegetable growing system; and
2. For all sub-practices, risk scores are derived by multiplying the points (P) by the proportion of the productive vegetable growing area occupied by the sub-practice (%); and
3. The total *nitrogen leaching risk** is calculated by summing the total number of sub practice positive points and deducting the sub practice negative points; and
4. Where the *commercial vegetable growing** activity occurs in conjunction with any other intensive farming *land^A* use, separate *nitrogen leaching risk** scores must be calculated for each intensive farming *land^A* use.

PART A: Nitrogen Leaching Risk Scorecard – *Commercial Vegetable Growing land management practices**

Topic 1: Nitrogen Fertiliser Practices

(a) Nitrogen fertiliser annual application rate	Points (P)	Proportion of productive area (%)	Risk Score = P x %
N fertiliser: <100 kgN /ha	0		
N fertiliser: 100-150 kgN /ha	30		
N fertiliser: 151-200 kgN /ha	60		
N fertiliser: 201-250 kgN /ha	90		
N fertiliser: 251-300 kgN /ha	150		
N fertiliser: 301-400 kgN /ha	200		
N fertiliser: >400 kgN /ha	250		

(b) Nitrogen fertiliser application rate per application (individual)	Points (P)	Proportion of productive area (%)	Risk Score = P x %
N fertiliser: <25 kg /ha	-30		
N fertiliser: 25-50 kg /ha	0		
N fertiliser: 51-75 kg /ha	30		
N fertiliser: 76-100 kg /ha	60		
N fertiliser: >100 kg /ha	90		

(c) Nitrogen balance/budget	Points (P)	Proportion of productive area (%)	Risk Score = P x %
Yes	-50		
No	0		

(d) Nitrogen soil testing	Points (P)	Proportion of productive area (%)	Risk Score = P x %
Before every nitrogen fertiliser application	-50		
At the beginning of each crop cycle	-30		
One a year	0		
Never	50		

(e) Crop establishment fertiliser application method	Points (P)	Proportion of productive area (%)	Risk Score = P x %
Incorporated, GPS banded, controlled application	-20		
Surface, GPS banded, controlled application	-15		
Incorporated, banded	-10		
Surface, banded	-5		
Surface broadcast, incorporated	10		
Surface broadcast	20		

(f) Side fertiliser application method	Points (P)	Proportion of productive area (%)	Risk Score = P x %
GPS banded, controlled application	-15		
Banded	-5		
Broadcast	20		

Topic 2: Soil Health

(a) Practices between crops	Points (P)	Proportion of productive area (%)	Risk Score = P x %
Cover crop	-30		
Fallow < 4 weeks	0		
Fallow 4 – 12 weeks	25		
Fallow > 12 weeks	50		
(b) Catch crops (cut-and-carry)	Points (P)	Proportion of productive area (%)	Risk Score = P x %
Yes	-20		
No	0		

PART B: Definitions

Nitrogen fertiliser annual application rate (sub practice 1(a)): means the total quantity of elemental nitrogen fertiliser applied divided by the productive area. This should be split into the different rate bands based on the proportion of productive area (i.e., 50% at 100 – 150 kgN/ha and 50% at 151 – 200 kgN/ha). This is not a whole operation average.

Nitrogen fertiliser application rate per application (sub practice) 1(b)): means the amount of elemental nitrogen applied per hectare for a single application. This should be split into the different rate bands based on the proportion of productive area where rates vary between crops. This is not a whole operation average.

Catch crop: means any crop that is grown with the primary objective of catching excess nitrogen in soils that otherwise may be lost through leaching. At harvest this crop is exported off farm. Examples include maize and grass grown for silage or hay.

Cover crop: means any crop that is grown with the primary objective of catching excess nitrogen in soils that otherwise may be lost through leaching. Before the planting of the next vegetable crop the cover crop is mulched and/or incorporated into the soil.

Fallow: means a period of time after crop harvest where the soil remains bare.

Nitrogen soil testing (mineral N): means the use of soil mineral N testing. E.g., Quick N test or laboratory based mineral N.

Nitrogen balance/budget: means a decision support tool to help a grower understand the inputs and outputs of nitrogen for a crop growing system. Nitrogen outputs are balanced against nitrogen inputs in a graph or table, categorised by source or destination. Nitrogen budgets assist growers with appropriate nitrogen fertiliser recommendations.

Productive Area: means the total productive vegetable growing area within the boundaries of the *land*[^] (boundary to boundary). This includes the block or paddock where the crop is grown, including wheel tracks and beds that are not cropped, as well as headlands and races. This includes both owned and leased land. While the total land area cannot increase without consent, the location of leased land may change from year to year. The level of risk on the all leased land must be assessed and must not increase the overall risk level.

Productive area does not include the land occupied by buildings and yards. Productive area does not include areas that cannot be cropped such as blocks of *indigenous** vegetation , nor does it include permanent pasture (being *land*[^] in pasture for longer than 2 years).

Crop establishment fertiliser application methods:

Incorporated: means the fertiliser is applied into the soil at the time of application.

GPS banded: means the placement of fertiliser in continuous narrow ribbons, usually at specific distances from the seeds or plants, recorded using GPS.

Banded: means the placement of fertiliser in continuous narrow ribbons, usually at specific distances from the seeds or plants.

Surface: means the application of fertiliser which remains on top of the soil.

Broadcast: means the spreading of fertiliser evenly over a large area. The fertiliser then remains on the soil surface to break down.

Controlled application: means a method of applying fertiliser in a precise and targeted manner using an electronic rate controller that adjusts rates during spreading irrespective of speed.

Schedule [Z] - Calculation of Nitrogen Leaching Risk Limit*

Part A – Nitrogen leaching risk limit* where a farm is predominantly within the parameters described by a single cell of Table 14-2A

Except as set out in Part B below, the *Nitrogen Leaching Risk limit** is as set out in Table 14-2A (for pastoral farming) and Table 14-2B (for commercial vegetable growing).

A *Nitrogen Leaching Risk limit** shall be regarded as being applicable to an intensive farming *land^* use if at least 90% of the area of that *land^* is located within the rainfall and profile available water categories described in Tables 14.2A and 14.2B as applying to that *Nitrogen Leaching Risk limit**.

For the purpose of applying Tables 14.2A and 14.2B, rainfall shall be determined by reference to Map XX and profile available water shall be determined by reference to Map YY.

Commented [CR135]: Note for parties - the Regional Council is waiting on supply of these maps as GIS layers.

Part B - Nitrogen leaching risk limit* where *land^* is located within multiple cells in Table 14.2A

This part applies where more than 10% of the *land^* occupied by an intensive farming *land^* use activity is located :

- in one rainfall category (as specified in Table 14.2A and shown on Map XX) and the balance of the *land^* is located in one or more of the other categories; or
- in one category of profile available water (as specified in Table 14.2A and shown on Map YY) and the balance in one or more of the other categories.

In the case of either (a) or (b) above, the *Nitrogen Leaching Risk Limit** shall be calculated as follows:

Nitrogen leaching risk limit* = % of area of the *land^* in each cell of Table 14.2A multiplied by the score in that cell *plus* the percentage of the area of the *land^* in any other cell multiplied by the score in that other cell.

For example: *Nitrogen leaching risk limit** = (%L₁ x Y) + (%L₂ x Z)

Where:

%L₁ is the percentage of the *land^* that has rainfall and profile available water described by a cell in Table 14.2A;

Y is the risk score in the cell of Table 14.2A to which %L₁ applies;

%L₂ is the percent of the property that has rainfall and profile available water described in a cell of Table 14.2A other than the cell referred to in %L₁; and

Z is the score within the cell of Table 14.2A to which %L₂ applies.

Illustrated Example:

Using the table below, if a 200ha farm in the 1000-1300 rainfall category has 50% of its land area in the 'medium soil' and 50% in the 'coarse soil' category, the *Nitrogen leaching risk limit** is 50% x 150 (75) plus 50% x 120 (60) = a limit of 135.

Rainfall	Profile Available Water		
	151-350mm ('fine soil')	61-150mm ('medium soil')	0-60mm ('coarse soil')
Rainfall 1 <1000 mm/year	-	-	-

Rainfall 2 1000-1300 mm/year	-	50% x 150 = 75	50% x 120 = 60
Rainfall 3 1300-1600 mm/year	-	-	-
Rainfall 4 >1600 mm/year	-	-	-