

Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments.

Submission form on publicly notified – Proposed
 Waikato Regional Plan Change 1 – Waikato and
 Waipa River Catchments.

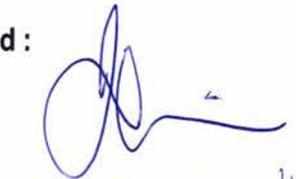
SubForm	PC12016	COVER SHEET	
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		Submission Number	
Entered		Initials	
File Ref		Sheet 1 of	

NAME AND CONTACT DETAILS		
Full name Ian David Williams		
Full address 440 Peacockes Rd., RD 2, Hamilton		
Email: willyandelaine@gmail.com	Phone 0274950789	Fax

I WISH TO APPEAR IN PERSON BEFORE THE COMMISSIONERS HEARING THESE SUBMISSIONS

ADDRESS FOR SERVICE OF SUBMITTER		
Full name Ian David Williams		
Address for service of person making submission 440 Peacockes Rd., DR 2, Hamilton		
Email WILLYANDELAIN@GMAIL.COM	Phone 0274950789	Fax

TRADE COMPETITION AND ADVERSE EFFECTS <i>(select appropriate)</i>
I could not gain an advantage in trade competition through this submission and I am directly affected by the subject of this submission

Signed : 
 Ian David Williams

Date:
 8/2/16

SUBMISSION POINTS

My wife and I own an 8.1 ha property and lease an adjoining 20ha on Peacockes Road.

We grow 11.5 ha of maize silage for sale in summer and fatten around 400 lambs in winter. We are part of the local stream care group on the Mangakotukutuku stream and have planted over 5000 native trees and shrubs as part of our desire to see the stream restored. We use minimum tillage techniques for our cropping and have a nitrogen reference point of around 11kgsN leached/ha/yr.

In the future, we plan to complete the planting of our banks and then covenant them so that the hard work we have done won't be wasted.

As a matter of principle, I support the vision and strategy for the river and in general am very supportive of the direction of Plan Change 1.

However, as a scientist, and as a farmer, I am particularly concerned about the following aspects of Plan Change 1. They will have implications all this will have for my property, my current farm business and the economic wellbeing of the Waikato region.

- The broad brush approach which doesn't differentiate between sub-catchments with low levels of environmental damage and those with high,
- The lack of science and monitoring at a sub-catchment level, to identify areas of priority for environmental improvement,
- The cost and practicality of implementing the rules,
- The rules around land change which will restrict the ability to take up market opportunities and restrict the region's economy,
- The cost and practicality of developing a nitrogen reference point,
- The timeframes for complying with the nitrogen reference point rules which are too short, given that OVERSEER is still being developed for the cropping sector,
- The effect that the nitrogen reference point will have on my business, the value of my land and my economic well-being,
- The costs, both cash and loss of opportunity, and the practicality of the rules for stock exclusion, cultivation and setback width,
- The cost of developing and implementing a farm environment plan, leading to the unnecessary and the costly regulation of my farm business,
- The specificity of the rules around cultivation and set-back widths

I set out my concerns more specifically in the table below.

Page No	Reference (e.g Policy or Rule number)	Support or Oppose	Decision sought	Reasons
40	Rule 3.11.5.2	Support in Part	<p>Change 4.b.ii to 15kgN/ha.yr</p> <p>Change 4.c to Contaminants from cultivation and grazing are managed and minimised</p> <p>Remove 4.e.i as this will be covered by the suggested amendment above</p>	I support this rule as it is aimed at removing onerous management changes and compliance requirements on low emitters. The couple of suggested amendments allow farmers the flexibility to use best practice to avoid contaminants entering the water ways
42	Rule 3.11.5.4 (5) Controlled Activity Rule – Farming activities with a Farm Environment Plan not under a Certified Industry Scheme	SUPPORT IN PART	<p>Change to:</p> <p>.A nitrogen reference point is produced according to the following time frames:</p> <ol style="list-style-type: none"> 1. All farms above 20 ha in Priority 1 catchments December 31, 2020 2. All farms above 20 ha in Priority 2 catchments December 31, 2023 3. All other properties 1 January 2026 	The time frames need to reflect where the biggest change needs to come from. These are based on size and priority catchments. The most money can be earned from Environment Planners from the smaller properties and therefore this is where they are likely to focus. Small properties tend to have smaller impacts
45	Rule 3.11.5.7 Non-complying activity rule – Land Use change	OPPOSE	<p>Remove this rule:</p> <p>Replace it with a rule that enables land-use change to occur with reference to established sub-catchment limits.</p> <p>Land-use change for farming activities with contaminant losses below the catchment limit is a permitted activity so long as contaminant losses do not exceed the sub-catchment limit.</p>	<p>I am concerned that this rule is not practical because:</p> <ol style="list-style-type: none"> 1. It is too heavy-handed to apply a land-change rule to the whole region. A more flexible approach which acknowledges differences between sub-catchments will prevent unnecessary cost and aggravation for both farmers and the council. 2. The rule as it is written prevents farmers from being able to capitalise on market opportunities in a timely manner. Opportunities could be lost because of the requirement and costs associated with the preparation and approval of consents for land

			Land-use changes for farming activities with contaminant losses above the sub-catchment limit is a consented activity.	<p>use change.</p> <p>3. Farm profitability will be constrained by the consent processes and the economic resilience of the region will decrease.</p> <p>4. The rule disregards the fact that many farmers lease land, some on a short term basis. As the leases change, so will the land-use and it will be difficult to establish whether land use intensification has occurred.</p>
47	Schedule B Nitrogen Reference Point	OPPOSE in part	<p>I submit that the time frames for the development of NRPs for mixed arable systems is extended until the development work for the OVERSEER crop module is completed.</p> <p>And</p> <p>that the rule be redeveloped to address the inequities that high and low NRP numbers will have on land values.</p> <p>I propose as a fairer approach; Waikato Regional Council develops sub-catchment limits based on the scientific measurement and monitoring of contaminant levels within the sub-catchment waterways:</p> <p>Farms in the catchment with NRPs greater than the sub-catchment limit must endeavour to reduce their contaminant losses over time.</p>	<p>I am concerned about the level of accuracy in the calculation of NRP because:</p> <p>1. OVERSEER is not routinely used by the cropping sector. Most arable farmers have had no prior experience with OVERSEER budgets and many certified nutrient managers have had limited experience with modelling arable systems with both crops and stock.</p> <p>2. The Foundation for Arable Research, completed an independent review of OVERSEER in 2013. (https://www.far.org.nz/research/environment/overseer_review). The panel of experts found that OVERSEER® is currently the best tool available for estimating long term, average nitrate leaching losses from the root zone across the diversity and complexity of farming systems in New Zealand, but that further work on the cropping model is needed to enhance confidence in the OVERSEER® estimates of nitrate leaching from arable farms. A subsequent work programme validating the nutrient loss numbers from OVERSEER with APSIM has been completed. Recommendations from these pieces of work have not yet been implemented into the OVERSEER crop module</p> <p>3. Attempts to model cropping systems in OVERSEER often deliver error messages preventing the nutrient reports from running. A number of “work-arounds” have been recommended by OVERSEER Ltd to manage these error messages. This moves</p>

			<p>Farms in the catchment with NRPs below the sub-catchment limit may continue any farming activity as long as their contaminant losses do not exceed the set limit as measured by annual nutrient budgets.</p>	<p>the modelled data away from the actual farm data, increases the time and cost to prepare an OVERSEER budget and reduces the level of confidence that the farmer has in the nutrient budget.</p> <p>4. Nitrogen loss numbers from OVERSEER with a low level of confidence are good to provide a rough estimation of the farm nitrogen loss but they should not be used to develop NRPs for compliance.</p> <p>I am also concerned that a low NRP number will impact on the land-value of my farm, the so-called “grand-parenting” effect.</p> <p>If the Waikato Regional Council develops sub-catchment limits based on the scientific measurement and monitoring of contaminant levels within the sub-catchment waterways, farmers and communities can develop targeted approaches to reducing contaminant levels. The focus is then on those catchments with bigger contaminant loads, with less attention on catchments where the loads are below a level of concern.</p> <p>This is a more equitable approach. It will not incur unnecessary constraints and costs on farmers and is likely to be viewed with greater respect than a blanket approach.</p> <p>I am also concerned that this is approach does not reward best practice. With a very low NRP, I should be rewarded for the changes we have already made and that as long as we don’t exceed a certain NRP (e.g. 20kgsN/ha) we should be free from any further bureaucratic demands. We simply can’t do any better.</p>
50	Schedule C Stock Exclusion	SUPPORT		I fish in these streams I don’t want cattle, pigs or deer polluting them
51	Schedule 1	OPPOSE in part	Amend Schedule 1	I support the requirement for farm environment plans, they

	Requirements for farm environment plans		<p>I support the requirement that a Farm Environment Plan shall be certified as meeting the requirements of Schedule A.</p> <p>As an addition to the Schedule 1, I submit that farmers should be able to develop their own plans, either on their own accord or as participants in FEP development workshops.</p> <p>Certification of the FEP can be achieved by having the plan reviewed by a Certified Farm Environment Planner. The review will include a farm visit and an assessment of the identified environmental risks for contaminant losses and the mitigation plan for these risks.</p>	<p>provide an opportunity for farmers to understand the environmental risks on their farms and to develop mitigation strategies to reduce the impact of their farming activities on the environment.</p> <p>If farmers develop their own plans, consistency with the Schedule 1 can be achieved by a certification process whereby the plan is reviewed by a Certified Farm Environment Planner, and the review includes a farm visit and an assessment of the identified environmental risks for contaminant losses and the mitigation plan for these risks.</p> <p>The reasons for this additional provision is to:</p> <ol style="list-style-type: none"> 1. Reduce the cost of plan development. Consistency in the quality of the plans will be maintained by the review process. 2. Reduce the level of dependence and likely pressure on Certified Farm Environmental planners for plan development.
52	Schedule 1- Point (f)(i) A description of cultivation management.	OPPOSE in part	<p>I submit that Point (f)(i) is removed from Schedule 1.</p> <p>and point f is re-worded to read:</p> <p>(f) A description of cultivation management, including: How the adverse effects of cultivation will be mitigated through appropriate erosion and sediment controls for each paddock that will be cultivated including by:</p>	<p>I accept that sediment movement from cultivated land is an environmental risk. Soil losses also have a direct economic cost to the farm, however a rule preventing cultivation on slopes exceeding 15° is impractical because:</p> <ol style="list-style-type: none"> 1. The risk of contaminating water ways with sediments is more strongly related to the distance between the cultivated land and the receiving waterway than the slope of the land. In many instances sediments moving from cultivated land will not directly affect waterways. 2. When considering the environmental risks associated with

			<p>Points (a), (b), (c) and (d)</p> <p>Points (e) and (f) do not apply to the risks associated with cultivation. I submit that these points are renumbered and removed from the cultivation clause.</p>	<p>cultivation the farmer and the environmental consultant must consider the following characteristics of the cultivated land: slope, proximity to receiving water bodies, overland flows (point a), measures to divert overland flows (point b) and ways to trap sediment (point c). Only if there is a high risk of contaminants getting into waterways and no practical means of stopping them, should cultivation be avoided. This can be addressed in individual farm environment plans.</p> <p>3. The measurement of slope by farmers and consultants is difficult as slope is not consistent within the landscape. Within a paddock, slope will vary, and if the rule is to be upheld there will parts of the paddock which will need be left uncultivated. This poses a number of costs and management problems to the farmer, including:</p> <ul style="list-style-type: none"> • The lost opportunity cost of land taken out of production. • The requirement to find an alternative productive and efficient use for the land. <p>4. Implementation and enforcement of this rule will require detailed slope information such as LIDAR, for every Waikato farm. Will WRC be able to supply this information to all farmers?</p>
51	Schedule 1-Points 2(b)(iii) and 2.(f)(ii)(d)-Setback Width	OPPOSE in part	<p>I submit that: points 2(b)(iii) and 2(f)(ii)(d) in Schedule 1 should be re-worded to read;</p> <p>2(b)(iii) - The provision of cultivation setbacks is designed to mitigate the environmental risk of contaminant losses.</p> <p>2(f)(ii)(d) - maintaining appropriate buffers between cultivated areas and water bodies.</p>	<p>A defined width for the setback of a minimum 5m is too prescriptive and will lead to a direct cost to the farm from the lost opportunity of land taken out of production and the ongoing maintenance of managing the vegetation in the set-back.</p> <p>Setbacks are important to reduce the risk of contaminants entering waterways but width should not prescribed in the rules. The design of setbacks to filter contaminants depends on a number of physical characteristics such as slope, soil type, overland flow paths and cultivation frequency and intensity.</p> <p>Effective setback design draws on proven scientific and</p>

				<p>engineering information, not regional rules.</p> <p>Environmental consultants developing mitigations in the farm plan process must design setbacks that are acceptable to the farmer. Setback width must be based on proven scientific evidence and must be the minimum width to effectively filter contaminants. Setbacks that are too wide have an ongoing economic loss for the farm relating to the area of land removed from production and costs associated with weed and riparian plant control.</p> <p>In the report to Waikato Federated Farmers Farm Environment plan project, with reference to farm 5, the opportunity cost from lost production from the development and maintenance of 5-metre buffer zones separating the drains from the crops was estimated to be \$100,000.</p> <p>On this farm the topography is flat and the farmer felt the width of setbacks was excessive given that the risk of sediment movement into the drain was low and the risk period for sediment losses between cultivation and significant crop cover was 1 month for spring and autumn sown crops.</p> <p>Research shows that 91% of incoming sediment through a grass filter strip was deposited in the first 0.6m. (Parklyn, S. (2004, September). Review of Riparian Buffer Zone (MAF). A 0.6m grass strip at a slope of 10% will reduce soil loss between 63-85% depending on the cultivation programme of the land (Yuan, Bingner, & Locke, 2009). Compared to other vegetation, grasses were found to be the option for trapping sediments.</p>

From: Williams, Ian
To: [Healthy Rivers](#)
Subject: Healthy Rivers Submission
Date: Monday, 6 March 2017 4:26:56 p.m.
Attachments: [Submission-form IDW.doc](#)

Please find my personal submission as attached. I will deliver a signed copy to the front office tomorrow.

Cheers,

Ian

Ian Williams
Forage and Farm Systems Specialist
Pioneer Brand Products

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Email: iwilliams@genetic.co.nz



“No occupation is so vital to the human race, nor requires such a range of practical and technical knowledge, as farming” William H Miner 1915

“Be who you are and say what you feel. Those who care don’t matter and those who do matter, don’t care” Dr. Seuss

Proposed Waikato Regional Plan Change 1 – Waikato and Waipa River Catchments.

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FORM 5 Clause 6 of First Schedule, Resource Management Act 1991

SUBMISSIONS CAN BE	
Mailed to	Chief Executive, 401 Grey Street, Private Bag 3038, Waikato Mail Centre, Hamilton 3240
Delivered to	Waikato Regional Council, 401 Grey Street, Hamilton East, Hamilton
Faxed to	(07) 859 0998 <i>Please Note: if you fax your submission, please post or deliver a copy to one of the above addresses</i>
Emailed to	healthyrivers@waikatoregion.govt.nz <i>Please Note: Submissions received my email must contain full contact details. We also request you send us a signed original by post or courier.</i>
Online at	www.waikatoregion.govt.nz/healthyrivers
We need to receive your submission by 5pm, 8 March 2017.	

YOUR NAME AND CONTACT DETAILS		
Full name Ian David Williams		
Full address 440 Peacockes Rd., RD 2, Hamilton		
Email: willyandelaine@gmail.com	Phone 0274950789	Fax

SubForm	PC12016	COVER SHEET	
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TRADE COMPETITION AND ADVERSE EFFECTS <i>(select appropriate)</i>
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SUBMISSION POINTS

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We grow 11.5 ha of maize silage for sale in summer and fatten around 400 lambs in winter. We are part of the local stream care group on the Mangakotukutuku stream and have planted over 5000 native trees and shrubs as part of our desire to see the stream restored. We use minimum tillage techniques for our cropping and have a nitrogen reference point of around 11kgsN leached/ha/yr.

In the future, we plan to complete the planting of our banks and then covenant them so that the hard work we have done won't be wasted.

As a matter of principle, I support the vision and strategy for the river and in general am very supportive of the direction of Plan Change 1.

However, as a scientist, and as a farmer, I am particularly concerned about the following aspects of Plan Change 1. They will have implications all this will have for my property, my current farm business and the economic wellbeing of the Waikato region.

- The significant negative effect on rural communities,
 - The broad brush approach which doesn't differentiate between sub-catchments with low levels of environmental damage and those with high,
 - The lack of science and monitoring at a sub-catchment level, to identify areas of priority for environmental improvement,
 - The cost and practicality of implementing the rules,
 - The rules around land change which will restrict the ability to take up market opportunities and restrict the region's economy,
 - The cost and practicality of developing a nitrogen reference point,
 - The timeframes for complying with the nitrogen reference point rules which are too short, given that OVERSEER is still being developed for the cropping sector,
 - The effect that the nitrogen reference point will have on my business, the value of my land and my economic well-being,
 - The costs, both cash and loss of opportunity, and the practicality of the rules for stock exclusion, cultivation and setback width,
-

- The cost of developing and implementing a farm environment plan, leading to the unnecessary and the costly regulation of my farm business,
- The specificity of the rules around cultivation and set-back widths

I set out my concerns more specifically in the table below.



Page No	Reference (e.g Policy or Rule number)	Support or Oppose	Decision sought Say what changes to Plan Change 1 you would like.	Reasons
40	Rule 3.11.5.2 Permitted Activity Rule Point 4. b, ii	OPPOSE in part	I submit that Point (4. b, ii) is reworded from: “15kg nitrogen/hectare /year: whichever is the lesser, over the whole property or enterprise when assessed with Schedule B and”, to read: ii. 15kg nitrogen/hectare /year. I question the basis for setting a limit of 15kgN/ha/year across the whole region. There would appear to be no scientific basis for doing this.	The rule must enable farmers to have the flexibility to change their land uses and possibly increase their nitrogen loss up to a set sub-catchment limit of and still be a permitted activity. Changes in land use that might be considered are: Change in stock type Change in stocking rate Change in cropping activity.
42	Rule 3.11.5.4 (5) Controlled Activity Rule – Farming activities with a Farm Environment Plan not under a Certified Industry Scheme	SUPPORT IN PART	Change to: .A nitrogen reference point is produced according to the following time frames: <ol style="list-style-type: none"> 1. All farms above 20 ha in Priority 1 catchments December 31, 2020 2. All farms above 20 ha in Priority 2 catchments December 31, 2023 3. All other properties 1 January 2026 	The time frames need to reflect where the biggest change needs to come from. These are based on size and priority catchments. The most money can be earned from Environment Planners from the smaller properties and therefore this is where they are likely to focus. Small properties tend to have smaller impacts
45	Rule 3.11.5.7 Non-complying activity rule – Land Use change	OPPOSE	Remove this rule: Replace it with a rule that enables land-use change to occur with reference to established sub-catchment limits. Land-use change for farming activities	I am concerned that this rule is not practical because: 1. It is too heavy-handed to apply a land-change rule to the whole region. A more flexible approach which acknowledges differences between sub-catchments will prevent unnecessary cost and aggravation for both farmers and the council.

			<p>with contaminant losses below the catchment limit is a permitted activity so long as contaminant losses do not exceed the sub-catchment limit.</p> <p>Land-use changes for farming activities with contaminant losses above the sub-catchment limit is a consented activity.</p>	<p>2. The rule as it is written prevents farmers from being able to capitalise on market opportunities in a timely manner. Opportunities could be lost because of the requirement and costs associated with the preparation and approval of consents for land use change.</p> <p>3. Farm profitability will be constrained by the consent processes and the economic resilience of the region will decrease.</p> <p>4. The rule disregards the fact that many farmers lease land, some on a short term basis. As the leases change, so will the land-use and it will be difficult to establish whether land use intensification has occurred.</p>
47	Schedule B Nitrogen Reference Point	OPPOSE in part	<p>I submit that the time frames for the development of NRPs for mixed arable systems is extended until the development work for the OVERSEER crop module is completed.</p> <p>And</p> <p>that the rule be redeveloped to address the inequities that high and low NRP numbers will have on land values.</p> <p>I propose as a fairer approach; Waikato Regional Council develops sub-catchment limits based on the scientific measurement and monitoring of contaminant levels within the sub-catchment waterways:</p> <p>Farms in the catchment with NRPs</p>	<p>I am concerned about the level of accuracy in the calculation of NRP because:</p> <p>1. OVERSEER is not routinely used by the cropping sector. Most arable farmers have had no prior experience with OVERSEER budgets and many certified nutrient managers have had limited experience with modelling arable systems with both crops and stock.</p> <p>2. The Foundation for Arable Research, completed an independent review of OVERSEER in 2013. (https://www.far.org.nz/research/environment/overseer_review). The panel of experts found that OVERSEER® is currently the best tool available for estimating long term, average nitrate leaching losses from the root zone across the diversity and complexity of farming systems in New Zealand, but that further work on the cropping model is needed to enhance confidence in the OVERSEER® estimates of nitrate leaching from arable farms. A subsequent work programme validating the nutrient loss numbers from OVERSEER with APSIM has been completed. Recommendations from these pieces of work have not yet been implemented into the OVERSEER crop module</p>

			<p>greater than the sub-catchment limit must endeavour to reduce their contaminant losses over time.</p> <p>Farms in the catchment with NRPs below the sub-catchment limit may continue any farming activity as long as their contaminant losses do not exceed the set limit as measured by annual nutrient budgets.</p>	<p>3. Attempts to model cropping systems in OVERSEER often deliver error messages preventing the nutrient reports from running. A number of “work-arounds” have been recommended by OVERSEER Ltd to manage these error messages. This moves the modelled data away from the actual farm data, increases the time and cost to prepare an OVERSEER budget and reduces the level of confidence that the farmer has in the nutrient budget.</p> <p>4. Nitrogen loss numbers from OVERSEER with a low level of confidence are good to provide a rough estimation of the farm nitrogen loss but they should not be used to develop NRPs for compliance.</p> <p>I am also concerned that a low NRP number will impact on the land-value of my farm, the so-called “grand-parenting” effect.</p> <p>If the Waikato Regional Council develops sub-catchment limits based on the scientific measurement and monitoring of contaminant levels within the sub-catchment waterways, farmers and communities can develop targeted approaches to reducing contaminant levels. The focus is then on those catchments with bigger contaminant loads, with less attention on catchments where the loads are below a level of concern.</p> <p>This is a more equitable approach. It will not incur unnecessary constraints and costs on farmers and is likely to be viewed with greater respect than a blanket approach.</p> <p>I am also concerned that this approach does not reward best practice. With a very low NRP, I should be rewarded for the changes we have already made and that as long as we don’t exceed a certain NRP (e.g. 20kgsN/ha) we should be free from any further bureaucratic demands. We simply can’t do any better.</p>
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50	Schedule C Stock Exclusion	SUPPORT		I fish in these streams I don't want cattle, pigs or deer polluting them
51	Schedule 1 Requirements for farm environment plans	OPPOSE in part	<p>Amend Schedule 1</p> <p>I support the requirement that a Farm Environment Plan shall be certified as meeting the requirements of Schedule A.</p> <p>As an addition to the Schedule 1, I submit that farmers should be able to develop their own plans, either on their own accord or as participants in FEP development workshops.</p> <p>Certification of the FEP can be achieved by having the plan reviewed by a Certified Farm Environment Planner. The review will include a farm visit and an assessment of the identified environmental risks for contaminant losses and the mitigation plan for these risks.</p>	<p>I support the requirement for farm environment plans, they provide an opportunity for farmers to understand the environmental risks on their farms and to develop mitigation strategies to reduce the impact of their farming activities on the environment.</p> <p>If farmers develop their own plans, consistency with the Schedule 1 can be achieved by a certification process whereby the plan is reviewed by a Certified Farm Environment Planner, and the review includes a farm visit and an assessment of the identified environmental risks for contaminant losses and the mitigation plan for these risks.</p> <p>The reasons for this additional provision is to:</p> <ol style="list-style-type: none"> 1. Reduce the cost of plan development. Consistency in the quality of the plans will be maintained by the review process. 2. Reduce the level of dependence and likely pressure on Certified Farm Environmental planners for plan development.
52	Schedule 1- Point (f)(i) A description of cultivation management.	OPPOSE in part	<p>I submit that Point (f)(i) is removed from Schedule 1.</p> <p>and point f is re-worded to read:</p> <p>(f) A description of cultivation management, including: How the adverse effects of cultivation</p>	<p>I accept that sediment movement from cultivated land is an environmental risk. Soil losses also have a direct economic cost to the farm, however a rule preventing cultivation on slopes exceeding 15° is impractical because:</p> <ol style="list-style-type: none"> 1. The risk of contaminating water ways with sediments is more strongly related to the distance between the cultivated land and the receiving waterway than the slope of the land. In many

			<p>will be mitigated through appropriate erosion and sediment controls for each paddock that will be cultivated including by:</p> <p>Points (a), (b), (c) and (d)</p> <p>Points (e) and (f) do not apply to the risks associated with cultivation. I submit that these points are renumbered and removed from the cultivation clause.</p>	<p>instances sediments moving from cultivated land will not directly affect waterways.</p> <p>2. When considering the environmental risks associated with cultivation the farmer and the environmental consultant must consider the following characteristics of the cultivated land: slope, proximity to receiving water bodies, overland flows (point a), measures to divert overland flows (point b) and ways to trap sediment (point c). Only if there is a high risk of contaminants getting into waterways and no practical means of stopping them, should cultivation be avoided. This can be addressed in individual farm environment plans.</p> <p>3. The measurement of slope by farmers and consultants is difficult as slope is not consistent within the landscape. Within a paddock, slope will vary, and if the rule is to be upheld there will parts of the paddock which will need be left uncultivated. This poses a number of costs and management problems to the farmer, including:</p> <ul style="list-style-type: none"> • The lost opportunity cost of land taken out of production. • The requirement to find an alternative productive and efficient use for the land. <p>4. Implementation and enforcement of this rule will require detailed slope information such as LIDAR, for every Waikato farm. Will WRC be able to supply this information to all farmers?</p>
51	<p>Schedule 1-Points 2(b)(iii) and 2.(f)(ii)(d)-Setback Width</p>	<p>OPPOSE in part</p>	<p>I submit that: points 2(b)(iii) and 2(f)(ii)(d) in Schedule 1 should be re-worded to read;</p> <p>2(b)(iii) - The provision of cultivation setbacks is designed to mitigate the environmental risk of contaminant losses.</p>	<p>A defined width for the setback of a minimum 5m is too prescriptive and will lead to a direct cost to the farm from the lost opportunity of land taken out of production and the ongoing maintenance of managing the vegetation in the set-back.</p> <p>Setbacks are important to reduce the risk of contaminants entering waterways but width should not prescribed in the rules. The design of setbacks to filter contaminants depends on a</p>

			<p>2(f)(ii)(d) - maintaining appropriate buffers between cultivated areas and water bodies.</p>	<p>number of physical characteristics such as slope, soil type, overland flow paths and cultivation frequency and intensity.</p> <p>Effective setback design draws on proven scientific and engineering information, not regional rules.</p> <p>Environmental consultants developing mitigations in the farm plan process must design setbacks that are acceptable to the farmer. Setback width must be based on proven scientific evidence and must be the minimum width to effectively filter contaminants. Setbacks that are too wide have an ongoing economic loss for the farm relating to the area of land removed from production and costs associated with weed and riparian plant control.</p> <p>In the report to Waikato Federated Farmers Farm Environment plan project, with reference to farm 5, the opportunity cost from lost production from the development and maintenance of 5-metre buffer zones separating the drains from the crops was estimated to be \$100,000.</p> <p>On this farm the topography is flat and the farmer felt the width of setbacks was excessive given that the risk of sediment movement into the drain was low and the risk period for sediment losses between cultivation and significant crop cover was 1 month for spring and autumn sown crops.</p> <p>Research shows that 91% of incoming sediment through a grass filter strip was deposited in the first 0.6m. (Parklyn, S. (2004, September). Review of Riparian Buffer Zone (MAF). A 0.6m grass strip at a slope of 10% will reduce soil loss between 63-85% depending on the cultivation programme of the land (Yuan, Bingner, & Locke, 2009). Compared to other vegetation, grasses were found to be the option for trapping sediments.</p>
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