

Proposed Natural Resources Plan for the Wellington Region

Right of Reply

For Hearing Stream 4

Report date: 04 May 2018

Topic: Water races and pumped drainage schemes

Report prepared by:

Barry Loe

Contract Policy Advisor

Table of Contents

1. Introduction and scope.....	3
2. Matter raised by the Panel or submitters.....	3
2.1 Do pumped drainage schemes fall under the definition of surface water body?	3
2.2 Is there scope in submissions and relief sought to make the s42A recommended amendments to Rule R59?.....	4
2.3 Would section 20A will apply to pump stations if the activity status is changed to controlled for Rule 59?	7
2.4 Is there a gap in the plan related to the associated damming and diversion of the pumped drainage schemes?	7
2.5 Provide a table/flow chart which shows the bundle of activities for water races and relevant rules	8
Appendix A: s32AA Table: Water races and pumped drainage schemes	12
Appendix B: Tracked change and clean versions of proposed amendments	16

1. Introduction and scope

1. My name is Barry Loe. I wrote the Water races and pumped drainage schemes section (Issue 11) of the s42A Officer's Report: Water quality dated 12 January 2018, released in advance of Hearing Stream 4. My qualifications and experience are set out in section 2 of that report.
2. This Right of Reply responds to matters raised by submitters and the Panel in relation to Water races and pumped drainage schemes since the s42A Officer's Report: Water races and pumped drainage schemes was released. Where I include recommendations in this Right of Reply, they replace the recommendations I made in my s42A Officer's Report; otherwise, I stand by the recommendations made in my s42A Officer's Report.
3. Appendix A lists my recommended amendments, and an assessment under s32AA. Changes that I recommend as a result of this Right of Reply are shown in **blue text** that is underlined or ~~struck-out~~. Original recommendations from the s42A Report that I continue to support are shown in **red text** that is underlined or ~~struck-out~~.

2. Matter raised by the Panel or submitters

2.1 Do pumped drainage schemes fall under the definition of surface water body?

4. The drainage schemes in the Wairarapa are part of the flood management infrastructure of the lower Ruamahanga valley. The schemes are networks of open drains that remove surface water from land, and to lower the water table beneath agricultural land. The drain networks discharge to rivers, a wetland and a lake/coastal lagoon. In low-lying areas in the lower Ruamahanga catchment, some of the drainage networks incorporate a pumping system to lift the surface water that collects behind a dam or weir in the drain, into the drain outlet to the river, wetland, or lake/coastal lagoon.
5. Open drains are surface water bodies, as defined in the proposed Plan. The proposed Plan has identified outcomes for surface water quality including in Objectives O3, O4, O5, O23, O24, O25 and O29, and the water quality in the drain networks and the discharge from them, may have a significant influence on the water quality in the receiving surface water body. The water quality in the drains, and the discharge from the drain networks, needs to be managed to achieve the proposed Plan's objectives for rivers, wetlands and lakes/coastal lagoons.

6. Proposed Plan policies that are relevant to the management of water quality in open drains, the discharge and adverse effects in the receiving water include Policies P63, P64, P65, P66, P67, P70, P71 and P72.
7. The pump system is a deliberate action that causes a discharge of water and contaminants into water and therefore is subject to RMA s15(1)(b). The discharge is a point source discharge. The water discharged is expected to contain contaminants. The discharge must be authorised either by a rule in a plan, and proposed plan or a resource consent.

2.2 Is there scope in submissions and relief sought to make the s42A recommended amendments to Rule R59?

8. I have reviewed the submissions to Rule R59 and the recommendations I made in the s42A Report: Water quality, relating to Rule R59. There are three submissions on Rule R59:
 - Federated Farmers (S352/190) supports the rule as notified.
 - Fish & Game (S308/190) seek amendments to the conditions of Rule R59, to set limits on the discharge including; the standards for freshwater objectives in Tables 3.4 and 3.4a (as amended in the submitter's relief sought), and limits on change in visual clarity and temperature, dissolved oxygen and particulate organic matter.
 - Rangitāne o Wairarapa (S279/175) are opposed because Rule R59 does not protect wetlands nor adequately describe the source or quality of water discharged. The submitter seeks that additional conditions are added to the rule, that:
 - (i) the discharge does not drain water from a natural wetland or cause the water level in a natural wetland to be lowered; and
 - (ii) the concentration of nutrients (P and N) within the discharge are no greater than the applicable concentration limits for the water body into which the discharge occurs.

9. The submission from Rangitāne o Wairarapa is opposed in part in the further submission from DairyNZ and Fonterra Co-operative Group Limited (FS84/079), as the further submitter considers that the Whaitua Committees should determine water quality targets and outcomes for water bodies. The submitter notes that, while in principle it makes sense for the concentration of nutrients in the discharge to be lower than the limits for the receiving water body, this cannot always be achieved in practice due to short-term aberrations.
10. On reflection, I consider that these submissions do not clearly provide scope for an amendment to change the consent activity status from a permitted to a controlled activity. Rather than introduce a consent requirement I consider that a similar outcome can be achieved through more specific permitted activity conditions to manage the effect of the discharge. This is consistent with the relief sought in the submissions from Fish and Game and Rangitāne o Wairarapa seek additional conditions including a broader range of specific water quality limits, and limits on effects of the discharge.
11. The contaminants of concern in these discharges are; sediment, nutrients and micro-organisms. The water discharged from pumped drainage schemes can have very low dissolved oxygen levels, reducing the dissolved oxygen concentrations in the receiving water, and possibly producing objectionable odour if people are near-by. These contaminants can adversely affect water quality for aquatic ecosystems, impacting on significant sites and primary contact recreation areas.
12. Rule R59 has some narrative water quality limits to address some of these potential adverse effects, but the lack of quantitative limits will make the implementation of the rule difficult. In my view, it would not be unreasonable to include permitted activity conditions commensurate with Rule R42 – minor discharges for suspended sediments, erosion and pH, with additional limits for dissolved oxygen, and micro-organisms where a discharge from a pumped drainage scheme may affect a primary contact recreation site.

Recommendation:

13. I recommend that Rule R59 be amended as follows:

Rule R59: Existing pumped drainage schemes – permitted activity

The discharge of water or contaminants into a **surface water body**, or coastal water from an existing **pumped drainage scheme**, established before 31 July 2015 ~~the date of public notification of the Proposed Natural Resources Plan (31.07.2015)~~, is a permitted activity provided the following conditions are met:

- (a) the discharge shall not cause any erosion of the channel or banks of the receiving water body or the coastal marine area,
~~erosion occurring as a result of the discharge shall be remedied,~~ and
- (b) the concentration of total suspended solids in the discharge shall not exceed:
 - (i) 50g/m³ where the discharge enters a site or habitat identified in Schedule A (outstanding water bodies), Schedule C (mana whenua), Schedule F1 (rivers/lakes), Schedule F3 (significant wetlands), Schedule F4 (coastal sites) or Schedule H1 (contact recreation),
 - (ii) 100g/m³ where the discharge enters any other water,
- (c) the discharge shall not cause the concentration of *E.coli* in a **significant contact recreation fresh water body** to exceed the limits in Table 3.1, or
- (d) the discharge shall not give rise the following, ~~effects~~ after the **zone of reasonable mixing**:
 - (i) the daily minimum dissolved oxygen concentration of less than 4mg/L, or
 - (ii) the 7-day mean minimum dissolved oxygen concentration of less than 5mg/L, or
 - (iii) a change in the pH of ± 0.5 pH unit, or
 - (iv) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials, or
 - (~~iv~~) any conspicuous change in the colour or visual clarity, or
 - (~~iii~~ vi) any emission of objectionable odour, or
 - (vii) fresh water is unsuitable for consumption by farm animals, or
 - (viii) any significant adverse effects on aquatic life.

2.3 Would section 20A will apply to pump stations if the activity status is changed to controlled for Rule 59?

14. Notwithstanding my recommendation in paragraph 13 above. Section 20A of the RMA provides for situations where; activities managed under a regional plan that were previously permitted activities or were not subject to a regional rule, and were lawfully established without resource consent, and a proposed or operative plan has a rule in effect that requires resource consent for the activity, enables a person undertaking the existing activity to continue to undertake the activity provided the effects of the activity are the same or similar and provided they make an application within 6 months of the rule taking effect.
15. There is no rule in the operative Freshwater Plan that specifically authorises the discharge from a pumped drainage scheme as a permitted activity. Rule 1 of the operative Plan is a general permitted activity discharge rule with conditions limiting the contaminants discharged. It is not certain whether the discharges complied with the rule, as no compliance monitoring had been undertaken. There is a current discharge permit for only one of the pumped drainage schemes, issued in 1978 under the Water and Soil Conservation Act 1967, and deemed under the RMA in 1991 to be a discharge permit with a 35-year duration, expiring in October 2026.
16. It is not certain that the discharges from other pump drainage schemes would have been lawfully undertaken without resource consent under the operative Plan. Without lawful establishment prior to the rule taking effect, s20A may not apply to those discharges that do not have a current resource consent.

2.4 Is there a gap in the plan related to the associated damming and diversion of the pumped drainage schemes?

17. Where activities associated with pumped drainage schemes occur in the bed of a river or a lake, or in a wetland the rules of the proposed Plan will manage; structures, damming, diversion, taking and use of water, both surface water and groundwater.
18. Where these activities occur outside the bed of a river or lake, or a wetland, there are no permitted activity rules to authorise the damming, diversion or taking of water in drains. Rule R130 provides for the diversion of groundwater as a permitted activity, and Rule R142 makes all taking and use of water not provided for by other rules, a discretionary activity. The restrictions on water in RMA s14(2), mean that unless

there is a regional rule authorising the damming or diversion of water, resource consent is required.

19. The physical arrangements at pump drainage schemes vary, so the activities that occur need to be determined case-by-case, but with the worst case being that damming, diversion or taking of water associated with pumped drainage scheme would be a discretionary activity. Potential effects on the environment that would be assessed include impacts on fish passage and flooding and inundation of neighbouring land.

2.5 Provide a table/flow chart which shows the bundle of activities for water races and relevant rules

20. The photos and information below are of the Carterton District Council (CDC) Taratahi water race system, and show the location of various activities undertaken to operate the water race system. The proposed Plan rules applying and how the activities are authorised, are set out in the accompanying table.

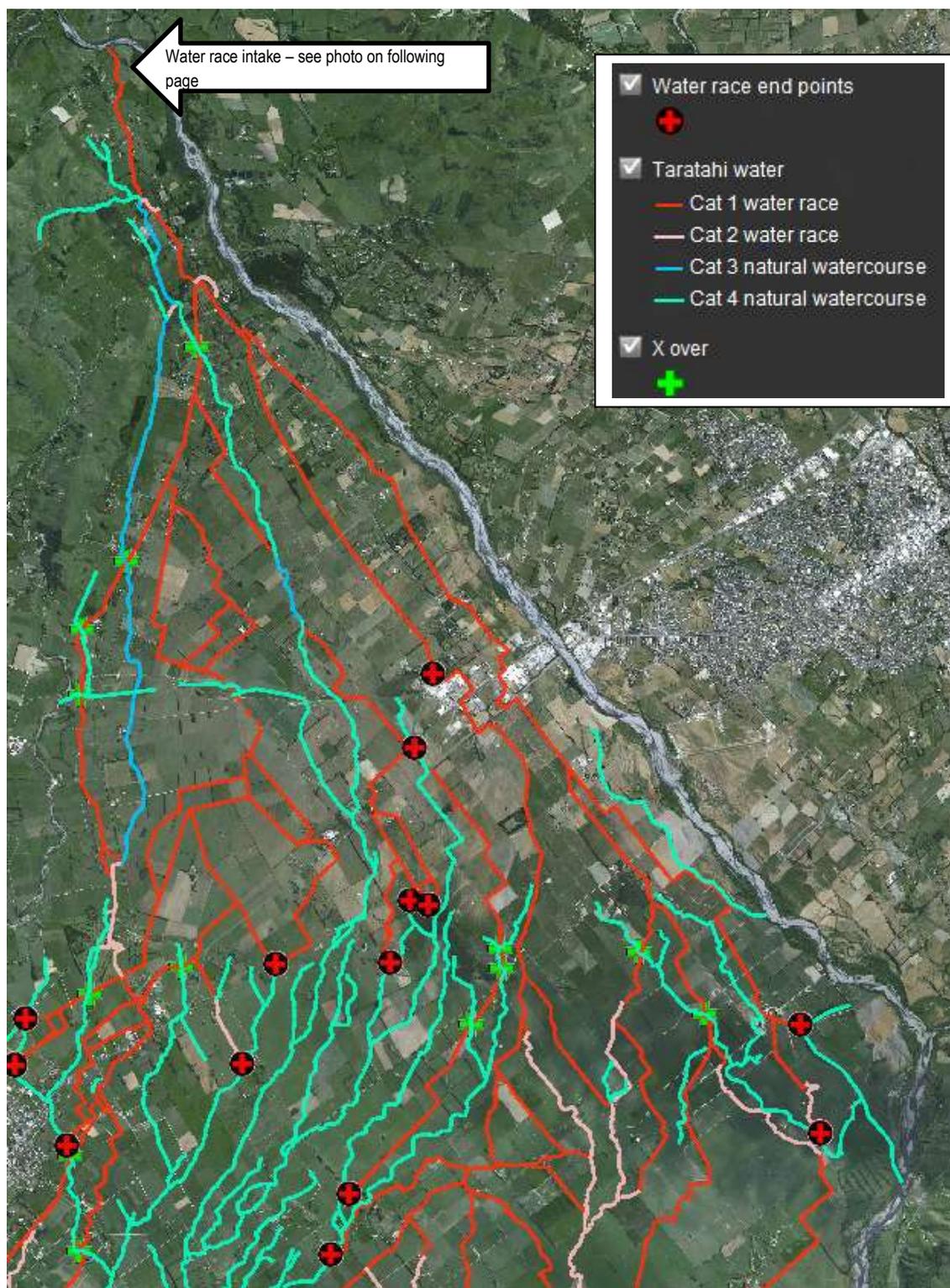


Figure 1: Carterton District Council (CDC) Taratahi water race system

The Taratahi water race system is comprised of four categories of watercourses, identified by different colours on the map above. A Cat 1 water race is a constructed channel and therefore not a river under the RMA, but is a surface water body under the proposed Plan. A Cat 2

water race has some natural watercourse features, and, by agreement with CDC, is managed as a river. Cat 3 and Cat 4 are rivers that have been incorporated into the water race network.

Discharging water from the water race into water in rivers, wetlands or lakes occurs at water race end points (red cross +).

Disturbing the bed of a river may occur at the main river intake (see photo below), and in the bed of a Cat 2 to 4 water race or natural watercourse. Disturbing the bed can also occur at any cross-over point (green cross +), where a water race crosses over or under a natural watercourse e.g. via a pipe or flume structure.

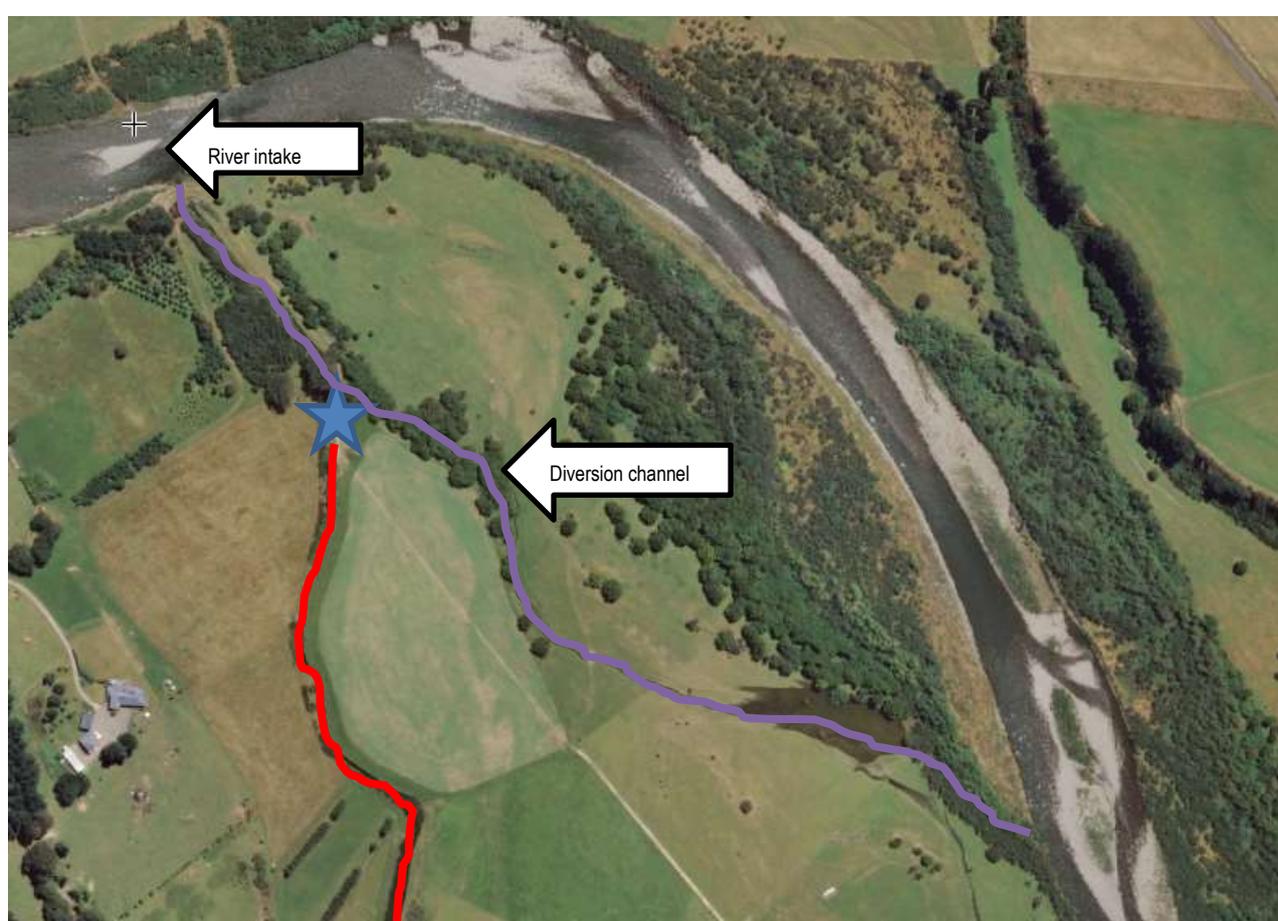


Figure 2: Photo showing main river intake

-  **Taking and using water** from the source river commences at this point on the diversion channel
-  **Diverting water** takes place at the river intake and along this diversion channel

Table 1: Activities associated with the operation of water races, RMA sections applying, proposed Plan rules, and authorisations held to operate.

Activity	RMA	Proposed Plan Rule	Authorised by
Diverting water	s14(1)	R131 – discretionary	Consent to divert water from source river via diversion channel
Take and use of water from the source river	s14(1)	R.R1 – restricted discretionary R.R3 – prohibited [see Note 1below]	Consent to take from diversion channel and use water in the water race system
Take and use of water from a water race	s14(1)	R138 – permitted	Permitted activity rule in a Plan
Discharging water	s15(1)(a)	R58 – discretionary	Global consent to discharge water at various location
Disturbing the bed of a river	s13(1)	R129 – discretionary	Global consent to undertake maintenance works at river intake, cross-over points, and in Cat 2-4 water race or natural watercourse

Note 1: Long-standing practice has allowed the taking of water for a water race system from a river when flows are below minimum flows. In the proposed Plan, Rule R.R1 does not exclude water races, so the activity defaults to a prohibited activity. The recommendation to Hearing Stream 3 in the section 42A Report: Water Allocation, is to amend Rule R.R1 to provide for water races to operate when the source river flow is below the minimum flow.

Appendix A: s32AA Table: Water races and pumped drainage schemes

This table sets out only the provisions of the notified proposed Plan on this topic **for which submissions were specifically received**. This table does not include provisions for which no specific submissions were received but that may be affected by consequential amendments. Where the officer has recommended amendments, these are set out below. Additions to the notified text are in underline and deletions are ~~strike-through~~ text. The section 32AA assessment follows alongside for each of the provisions where amendments have been recommended by the officer. If the officer does not recommend any changes, the provision appears in grey.

Red text amendments = recommendations from the officer's s42A report

Blue text amendments = updated recommendations from the officer's Right of Reply

Note that requests for **new** provisions are not included in these tables.

Amendment no./Submission no.	Chapter	Provision	Text of provision with any recommended amendments	Evaluation of amendment (section 32AA assessment)
S279/175 S308/190	5	Rule R59	<p><u>Rule R59: Existing pumped drainage schemes – permitted controlled activity</u></p> <p>The discharge of water or contaminants into a surface water body, or coastal water from an existing pumped drainage scheme, established before the date of public notification of the Proposed Natural Resources Plan (31.07.2015), is a permitted controlled activity provided the following conditions are met:</p> <p>(a) erosion occurring as a result of the discharge shall be remedied, and</p> <p>(b) the discharge shall not give rise the following effects after the zone of reasonable mixing:</p> <p>the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials, or</p>	<p><u>Effectiveness and efficiency</u></p> <p>The recommended amendments will increase the effectiveness and efficiency of the proposed Plan as the recommended amendments to Rule R59 will provide for a more efficient process to manage the effects on the environment from a discharge from a pumped drainage scheme. The recommended amendments continue to provide for the discharge as a permitted activity but with increased range of limits of effects on water quality to be met.</p> <p><u>Costs</u></p> <p>The recommendation, if adopted, will mean that the operators of pumped drainage schemes may need to monitor the discharge to assess compliance with the rule conditions.</p> <p><u>Benefits: (environmental, cultural, economic and social)</u></p> <p>There will be environmental and cultural benefits from the discharge from existing pumped drainage schemes being managed within a more explicit framework of conditions and limits. This will contribute to achieve the outcomes sought by the proposed Plan.</p> <p><u>Risk of acting or not acting</u></p> <p>The risk of not acting is that the Plan rule may authorise discharges that result in adverse effects on the environment that counteract outcomes to improve water quality, and that the Council may not be able to meet its</p>

			<p>any conspicuous change in the colour or visual clarity, or any emission of objectionable odour, or fresh water is unsuitable for consumption by farm animals, or any significant adverse effects on aquatic life.</p> <p><i>Matters of control</i></p> <ol style="list-style-type: none"> 1. Monitoring programme to determine the nature and scale of adverse effects on the environment from the discharge 2. Measures to avoid, remedy or mitigate the adverse effects on the environment of the discharge. <p>Rule R59: Existing pumped drainage schemes – permitted activity The discharge of water or contaminants into a surface water body, or coastal water from an existing pumped drainage scheme, established before <u>31 July 2015</u> the date of public notification of the Proposed Natural Resources Plan (31.07.2015), is a permitted activity provided the following conditions are met:</p> <ol style="list-style-type: none"> (a) <u>the discharge shall not cause any erosion of the channel or banks of the receiving water body or the coastal marine area,</u> erosion occurring as a result of the discharge shall be remedied, and (b) <u>the concentration of total suspended solids in the discharge shall not exceed:</u> 	<p>obligations under the NPS-FM. The amended rule will ensure that the operators of pumped drainage scheme operators will fulfil their responsibilities under the RMA, for an activity that is long-standing and necessary for the operation of the Wairarapa flood protection scheme.</p> <p><u>Decision about most appropriate option</u></p> <p>In my opinion the proposed amendment is the most appropriate way to address deficiencies in Section 5.2 identified in submissions.</p>
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- (i) 50g/m³ where the discharge enters a site or habitat identified in Schedule A (outstanding water bodies), Schedule C (mana whenua), Schedule F1 (rivers/lakes), Schedule F3 (significant wetlands), Schedule F4 (coastal sites) or Schedule H1 (contact recreation),
- (ii) 100g/m³ where the discharge enters any other water,
- (c) the discharge shall not cause the concentration of *E.coli* in a **significant contact recreation fresh water body** to exceed the limits in Table 3.1, or
- (d) the discharge shall not give rise the following ~~effects~~ after the **zone of reasonable mixing**:
 - (i) the daily minimum dissolved oxygen concentration of less than 4mg/L, or
 - (ii) the 7-day mean minimum dissolved oxygen concentration of less than 5mg/L, or
 - (iii) a change in the pH of ±0.5 pH unit, or
 - (iv) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials, or
 - (~~iv~~) any conspicuous change in the colour or visual clarity, or
 - (~~iii~~ vi) any emission of objectionable odour, or
 - (vii) fresh water is unsuitable for consumption by farm animals, or

Officer's Right of Reply Water races and pumped drainage schemes

			(viii) any significant adverse effects on aquatic life.	
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Appendix B: Tracked change and clean versions of proposed amendments

Rule R59: Existing pumped drainage schemes – permitted activity

The discharge of water or contaminants into a **surface water body**, or coastal water from an existing **pumped drainage scheme**, established before 31 July 2015 ~~the date of public notification of the Proposed Natural Resources Plan (31.07.2015)~~, is a permitted activity provided the following conditions are met:

- (a) the discharge shall not cause any erosion of the channel or banks of the receiving water body or the coastal marine area,
~~erosion occurring as a result of the discharge shall be remedied,~~ and
- (b) the concentration of total suspended solids in the discharge shall not exceed:
 - (i) 50g/m³ where the discharge enters a site or habitat identified in Schedule A (outstanding water bodies), Schedule C (mana whenua), Schedule F1 (rivers/lakes), Schedule F3 (significant wetlands), Schedule F4 (coastal sites) or Schedule H1 (contact recreation),
 - (ii) 100g/m³ where the discharge enters any other water,
- (c) the discharge shall not cause the concentration of *E.coli* in a **significant contact recreation fresh water body** to exceed the limits in Table 3.1, or
- (d) the discharge shall not give rise the following, ~~effects~~ after the **zone of reasonable mixing**:
 - (i) the daily minimum dissolved oxygen concentration of less than 4mg/L, or
 - (ii) the 7-day mean minimum dissolved oxygen concentration of less than 5mg/L, or
 - (iii) a change in the pH of ±0.5 pH unit, or
 - (iv) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials, or
 - (~~iv~~) any conspicuous change in the colour or visual clarity, or
 - (~~iv~~ vi) any emission of objectionable odour, or
 - (vii) fresh water is unsuitable for consumption by farm animals, or
 - (viii) any significant adverse effects on aquatic life.

Rule R59: Existing pumped drainage schemes – permitted activity

The discharge of water or contaminants into a **surface water body**, or coastal water from an existing **pumped drainage scheme**, established before 31 July, is a permitted activity provided the following conditions are met:

- (a) the discharge shall not cause any erosion of the channel or banks of the receiving water body or the coastal marine area, and
- (b) the concentration of total suspended solids in the discharge shall not exceed:
 - (i) 50g/m³ where the discharge enters a site or habitat identified in Schedule A (outstanding water bodies), Schedule C (mana whenua), Schedule F1 (rivers/lakes), Schedule F3 (significant wetlands), Schedule F4 (coastal sites) or Schedule H1 (contact recreation),
 - (ii) 100g/m³ where the discharge enters any other water,
- (c) the discharge shall not cause the concentration of *E.coli* in a **significant contact recreation fresh water body** to exceed the limits in Table 3.1, or
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