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Lodged via email to: stormwater_wastewater@taumataarowai.govt.nz

Dear Dr McFall,

The Manawatū District Council (MDC) thanks the Water Services Authority Taumata Arowai (the "Authority) for the opportunity to provide feedback on targeted amendments to the wastewater environmental performance standards (the "standards").

While MDC generally supports the recommended amendments to the regulations that are detailed in the correspondence from the Authority, these changes alone fail to address all the concerns that MDC has with the proposed standards. MDC's feedback therefore includes some matters that may be considered "out of scope" for this current consultation. However, MDC would like to continue to work with the Authority to see these other matters addressed via future amendments to the standards.

Support for the proposed technical amendments

Amendments to regulation 48 – Calculation of dilution ratio classes

MDC supports the proposed amendments to the 7MALF formula in regulation 48 (treatment requirements for discharges to water).

In addition, MDC recommends that the exact methodology for calculating the 7MALF be documented in the regulations following discussion with the SIG Hydrology group. MDC considers that without such guidance being published, there is potential for the formula to be inconsistently interpreted and/or applied.

To ensure consistency between hydrological monitoring and discharge monitoring, MDC also recommends that all data be linked to New Zealand Standard Time and the hydrological year (July – June).

Recommendations:

1. That the proposed amendments to the 7MALF formula in regulation 48 be retained.
2. That the Authority develop a clear methodology for calculating the 7MALF in consultation with the SIG Hydrology group, and that this methodology be published in guidance that sits alongside the regulations.
3. That all data used for hydrological and discharge monitoring be linked to New Zealand Standard Time and the hydrological year (July-June).

Regulation 93 - Risk and Site Capability Assessments for discharge of treated wastewater to land

MDC understands that the Authority is proposing to amend the discharge to land standards to provide that risk and site capability assessments relate to the time period when the discharge is occurring. MDC supports this change. However, MDC has some broader concerns with the overall approach taken in the standards to manage discharges to land.

Based on the initial consultation material, MDC understands that the intent was for the wastewater standards to facilitate or encourage the discharge of treated wastewater to land where possible, due to cultural and environmental benefits relative to direct river discharges. As the Authority is aware, MDC operates a dual discharge from its Manawatū Wastewater Treatment Plant in Feilding. While MDC is unable to discharge to land all year round, due to seasonal weather variations in rainfall and temperature and the impact on soil conditions, the irrigation season between November and March has significantly improved water quality and periphyton risk as low flow, high risk periods are avoided. MDC therefore agrees with the policy direction to enable land-based discharge of treated wastewater.

As land discharges are not common within New Zealand, MDC understands that there is limited information on which to base the regulations, especially in comparison to river discharges. MDC is concerned that as a result of limited information, the requirements that apply to land based disposal within the standard are overly conservative. Due to this conservatism, MDC is of the opinion that the intent of this policy direction will not be fully realised, and the uptake of land-based disposal options will be less than forecast. Council is aware that since the wastewater performance standards have been published, both the Palmerston North City Council and Rangitikei District Council have removed land disposal options from their reconsenting programs due to the perceived barriers / risk.

Recommendations

1. That future amendments to the regulations consider whether the standards are achieving their policy intent of encouraging land-based discharge over discharges to water.

AND

2. That the Authority work with MDC and the wider sector to amend the regulations to better facilitate land-based disposal and dual discharge systems.

Regulation 93 Determination of site classification category: slow-infiltration discharge

> *(1) The person carrying out a site assessment must determine the site classification category for a site with slow-infiltration discharge in accordance with this regulation.*

Regulation 93 requires a site to be classified based on six factors. These factors are assessed independently from one another. For example, five of the factors could result in site being classified as "category 1" but if one factor is classified as "category 5" the site is considered unsuitable for land disposal. Due to the array of factors there is a high probability that at least one factor will have a low grading. The matrix appears to be based around defining the optimal land disposal option. If the intent is to encourage wastewater operators to discharge to land, Council encourage the Water Service Authority to review this section to be more inclusive as ideal circumstances are not always feasible. As detailed above both Palmerston North and Rangitikei have excluded land discharge options from future plans due to the limitations imposed.

While the land that Manawatū District Council utilise for irrigation is not considered suitable under the standards matrix, wastewater has been successfully discharged to land for seven seasons. Both groundwater and surface water monitoring data has been independently reviewed to confirm that there is no evidence that the land disposal is having an adverse effect on the environment – in fact quite the opposite is true.

It is recommended that the Water Service Authority consider adding a clause similar to clause 92(8) to regulation 93. This would allow a more balanced assessment of the land suitability rather than discounting land disposal due to one factor.

In the event that the site is still classified as "Land Class 4" under table S91(2), the site should not be automatically excluded from the standards. It is recommended that a suitably qualified and experienced person (SQEP) should be required to determine the suitability of the land and recommend a suitable Land Class based on conditions of the site, discharge regime, additional mitigation and available evidence.

MDC remains committed to its dual discharge regime and has advocated for the standards to support such treatment regimes being constructed in other communities. However, we remain concerned that the current discharge to land requirements, including the risk and site capability assessment requirements, effectively encourage operators to discharge to water rather than land. For this reason, MDC encourages the Water Service Authority to review the land discharge section as a matter of urgency.

Recommendation:

1. That the Authority review the land discharge section of the regulations as a matter of urgency.

Other Feedback on the Wastewater Performance Standards

MDC requests that the Authority consider the following feedback that relates to other sections of the regulations. While potentially outside of the scope of the proposed technical amendments being consulted on currently, MDC recommends that this feedback be addressed through future amendments to the wastewater performance standards. MDC welcomes any further discussion with the Authority regarding these matters.

Part 3 Discharge from Wastewater Treatment Plants into Water

S40 Application of this Part

S 40 (2) (2) However, the standards set out in this Part do not apply—

(a) to the discharge of treated wastewater if the wastewater is sourced only from producers of industrial and trade waste; or

To improve treatment and management efficiencies, MDC is in the process of separating trade and industrial waster streams from domestic wastewater. Clarification is sought to determine if a domestic proportion needs to be mixed with the commercial waste stream for it to be covered under this standard. This appears to be an unintended consequence.

Recommendation

1. That the Authority clarify whether domestic wastewater must be mixed with industrial and trade waste for it to be covered under regulation 40.

S 47 Classification of rivers into dilution ratio classes

(1) If an application under regulation 46 is to discharge wastewater into a river, the application must specify the river's dilution ratio class.

(2) The dilution ratio class must be one of the following:

(a) high dilution:

(b) moderate dilution:

(c) low dilution:

(d) very low dilution.

Issue 1 - Step Change between dilution categories

MDC is concerned about the significant differences/steps in the treatment requirements that apply across the different dilution categories. The current dilution thresholds mean that the same level of treatment quality applies to a discharge with a dilution ratio of 200,

as a discharge with a dilution ratio of 50. For reasons of affordability, Council requests that the Water Service Authority consider how the categories can be replaced with a linear formula.

The benefits of a linear relationship are as follows:

- It allows operators to set a balance between treatment requirements and dilution,
- Operators are encouraged to increase the dilution ratio when moving an entire dilution category is not possible
- A formulae drives transparency. This is currently missing as the limits for different dilution categories are inconsistent (see point 2).
- Simplifies the standards as there will be one category rather than four.
- Address the inconsistencies between dilution categories

This would increase transparency as it would link the quality standard to the target in river quality. This consistency and transparency is lost under the current wording of the performance standards due to the step changes.

Recommendation

1. That the Authority develop a linear formula for treatment requirements at different dilution thresholds.

Issue 2 - Inconsistency in effluent quality standards

With the exception of E.coli, the effluent quality standards are inconsistent. When you divide the standards by the minimum dilution requirements for the low, moderate and high dilution categories the results should be identical if the same outcome is intended. As shown in Table 1 below, in general, the level of treatment required increases as dilution increases. MDC encourages the Authority to implement a further review to create consistency between categories.

TABLE 1: RECEIVING ENVIRONMENT CONCENTRATIONS AFTER COMPLETE MIXING

Parameter	Stats	Low	Moderate	High
cBOD5	median	1	0.3	0.08
	90th	2	0.6	0.16
TSS	median	1	0.3	0.12
	90th	2	0.6	0.24
Ammonia	90th	0.1	0.06	0.1
T Nitrogen	median	0.5	0.2	0.14
T Phosphorous	median	0.1	0.1	0.04
E.coli	90th	65	65	65

If the concentrations for low dilution are considered appropriate then MDC suggests that those effective concentrations should also be deemed appropriate for moderate and high

dilution. For clarity, where there is a change, the actual limits have been included in brackets (See Table 2 for details). Given the inconsistencies, clarification is required.

TABLE 2: ADOPTING A CONSISTENT APPROACH

Parameter	Stats	Low	Moderate	High
cBOD5	median	10	50(15)	250(20)
	90th	20	100(30)	500(40)
TSS	median	10	50(15)	250(30)
	90th	20	100(30)	500(60)
Ammonia	90th	1	5(3)	25
T Nitrogen	median	5	25 (10)	125(35)
T Phosphorous	median	1	5	25(10)
E.coli	90th	650	3250	16250

As these effluent quality standards are used as part of the periphyton adjustment, the inconsistencies in quality for different dilution ratios are compounded when the limits are adjusted for periphyton risk. This is especially significant when looking at total phosphorous limits. For instance, the total phosphorous concentration after full mixing for "high dilution low risk" is lower than the "low dilution high risk." Insufficient justification has been provided for these differences.

While Council concours with the effective phosphorous concentration after full mixing reducing in relation to risk, the dilution category is irrelevant in relation to preventing periphyton growth (see Table 3 for details). MDC requests further clarification as to how the respective limits were derived, given the apparent inconsistencies in the approach.

TABLE 3: PHOSPHOROUS CONCENTRATIONS AFTER FULL MIXING AND PERIPHYTON RISK GRADING APPLIED

Total Phosphorous	Low risk	Medium Risk	High Risk	Very High Risk
Low	0.1	0.07	0.05	0.025
Moderate	0.06	0.02	0.01	0.005
High dilution	0.04	0.02	0.004	0.001

S69 (3)(a)Periphyton risk assessment: mandatory considerations

(a) first, determining the overall risk of excess periphyton establishment and growth; and

If the intent of the wastewater Environmental Performance standards is to create consistency, a clear definition of what constitutes excess periphyton establishment and growth is required.

In addition to the defining what excess periphyton is, the assessment should assess the effect of the discharge and proposed discharge regime.

Recommendations:

1. That a definition of "excess periphyton establishment and growth" be added to the regulations.
2. That the Authority amend regulation 69(3)(a) as follows: (additions underlined)

   (a) first, determining the overall risk of *the proposed discharge causing, or contributing to,* excess periphyton establishment and growth;
3. That the periphyton risk assessment also considers the effect of the discharge and the proposed discharge regime.

S70 Periphyton risk categories

The person or consent authority preparing the periphyton risk assessment must determine that the overall periphyton risk category is one of the following:

(a) low risk:

(b) medium risk:

(c) high risk:

(d) very high risk.

In order to create consistency the low, medium, high and very high risks need to be defined. Without this clarification there will be an inconsistent approach in how periphyton risk is assessed. Ideally a SQEP should be involved with developing a consistent approach or methodology for periphyton risk assessments, and this approach specified in the standards, or associated guidance.

Recommendation:

1. That the Authority engage a suitably qualified and experienced person to develop an approach/methodology for determining overall periphyton risk and that this be documented in the standards or associated guidance.

S68 Application for resource consent must include periphyton risk assessment

(5) A consent authority that receives an application under subclause (1) must review the periphyton risk assessment as part of deciding whether to grant the resource consent.

For every application to discharge into a hard bottomed waterway, **three** SQEP are required to review the risk assessment. If there is uncertainty regarding how risk is to be determined, there could be three different opinions. This will lead to significant costs to the applicant and delay decisions from occurring. Where there are disagreements of this nature, the consenting authority typically defers to their expert. Due to the wording of the standards consenting authorities may use this to significantly increase treatment requirements.

Periphyton Implementation Material

While the performance standards are silent on the need for a multidisciplinary team to assess periphyton risk, there is reference to this in the implementation material. With wastewater treatment and cultural advisors being involved with the QMRAs it appears that the scope of periphyton risk assessment is being expanded. If the intent of the assessment is to determine the risk of excessive periphyton growth, MDC considers that the expertise and experience should be limited to this area of expertise. Clarification is required around the use of multidisciplinary team to complete the Periphyton assessment so as to ensure that the requirements are reasonable and do not add unnecessary cost.

Recommendation

1. That each periphyton risk category is clearly defined in the standards or associated guidance.

   AND

2. That the authority reconsider the need for a second SQEP to review the periphyton risk assessment, given that the regulations require that the consent authority completes their own risk assessment.

s71 Alternative nitrogen and phosphorus discharge concentration limits

(4) (a) (ii) If the river's dilution ratio class under regulation 47 is moderate dilution, the discharge concentration limits are as follows:

(a) if the discharge is classified as low risk,—

(ii) the annual median concentration of total phosphorus must not exceed 3 milligrams per litre of wastewater:

Under each dilution category, the TN and TP limits where the periphyton risk category is low are the same as the "default" limits set out in Regulation 49, with the exception of the TP limit in regulation 71(4)(a)(ii) for discharge in the moderate dilution category. This inconsistency seems to be in error and should be corrected to be consistent with S49(4)(g).

The original phosphorous limit for Total phosphorous in the consultation document was 3mg/l. However, through the consultation period this was increased to 5mg/l. It appears this amendment has not been carried through to the periphyton risk assessment.

Increasing the phosphorous limit to 5mg/l for low risk moderate dilution category is consistent with the "low dilution" limit of 1mg/l as it results in 0.1mg/l (5/50 = 0.1) after complete mixing.

Recommendation:

1. That regulation 71(4)(a)(ii) be amended as follows:

   "The annual median concentration of total phosphorus must not exceed ~~**3**~~ **5** milligrams per litre of wastewater"

S74 Application for resource consent

(1) An application for a resource consent to discharge wastewater in the circumstances set out in regulation 72 must—

*(a) be for a consent under which the consent holder would be permitted to discharge wastewater into a river only during a time period specified in the consent, but at all other times would be required to discharge the wastewater to land, store the wastewater, or manage it in another way (a **time-based consent**); and...*

MDC currently irrigates treated wastewater from the Manawatū WWTP in Feilding to land between November and March inclusive. With the exception of storm events, this discharge regime limits the "time period" for the risk and site capability for discharge to land sites to April – October inclusive. MDC considers that the same rationale should be applied to the "relevant period" that the mixed discharge regime 7MALF is calculated based on. That is, MDC requests that the Authority clarify that if the same discharge regime is retained, the 7MALF is calculated based on the months of April to October. This will achieve the intent of defining the likely low flow conditions during the "time period".

MDC recommends that the following definitions of "time period" and "exclusion period" be included in Section 42 (Interpretation)

- "Time period" – River discharge not restricted, 7MALF calculated based on this time period.
- "Exclusion period" - No river discharge occurs when river flows are below the amended 7MALF. Discharging during high flow events during this period are still permitted

In MDC's opinion, the low flow conditions during the "exclusion period" are not relevant in relation to calculating the 7MALF, as a river discharge will be prevented during these conditions. During storm events however, river discharges should still be permitted during the exclusion period as these discharges will coincide with conditions where the flows are significantly above the "time period" 7MALF. Given the higher flows during

storm events, river discharges during this period will have no impact on the likely minimum dilution.

Recommendations:

1. That Section 42 be amended to include definitions of "time period" and "exclusion period." Suggested wording for these definitions is above.
2. That the calculation of the 7MALF excludes that period of time when no river discharge occurs.

S77 Sampling

A wastewater treatment plant must comply with the following sampling, testing, and record-keeping requirements:

(a) if the plant is not a small wastewater treatment plant and it services a community of 10,000 or more people, it must implement a system to ensure that,—

(i) at least once each day, it samples the treated wastewater; and

A community with 100,000+ people has significantly more resources than a community with 20,000. To reduce the monitoring burden and lower costs for moderate-sized communities, MDC recommends that additional sampling frequency categories be added to the standards (i.e. 10,000-25,000 & 25,000 – 50,000).

Recommendation:

1. That regulation 77 (Sampling) is amended as follows:

(a) if the plant is not a small wastewater treatment plant and it services a community of 10,000 or more people, it must implement a system to ensure that it samples the treated wastewater at the following frequencies,—

~~*(ii) at least once each day, it samples the treated wastewater; and*~~

(i)	<10,000	every two weeks
(ii)	10,000 – 25,000	Once a week
(iii)	25,000 – 50,000	once each work day (Mon-Fri)
(iv)	>50,000	Once each day

s82 Reporting requirements: wastewater treatment plants

(5) The consent holder must ensure that an annual report—

(a) is reviewed by an independent and suitably qualified person; and

(b) includes a statement from that person verifying the contents of the report.

S82 (5) requires a independent suitably qualified person to review the annual report and verify its contents. As the contents in the annual report are "factual" and not ones "opinion" the need for this additional expenditure is questionable. There is limited value in requiring an independent SQEP to confirm that the required quality and discharge volume standards have been achieved when it is an achieved or not achieved scenario.

Recommendation:

1. That regulation 82 be amended to require an independent review of the annual report by an independent SQEP only if compliance has not been achieved.

   AND

2. That any review be limited to the proposed amendments for the purpose of concluding if they are going to be sufficient to address the identified non-compliances.

S89(3) Resource Consent Applications

The application may propose that the resource consent be granted subject to conditions that will alter the risk assessment or site classification undertaken for the purpose of the site assessment carried out under regulation 90

To avoid potential conflicts, at the application stage, MDC seeks working examples of how specific conditions might change the risk assessment / site classification.

The Manawatū District Council again thanks the Water Service Authority Taumata Arowai for the opportunity to provide feedback on technical amendments to the wastewater performance standards. We welcome any further conversations with the Authority in relation to any of the matters raised in this feedback.

Yours sincerely,

Shayne Harris

Chief Executive