

Healthy Rivers: Wai Ora – Comparison of Regional Plan Water Management Classes and attributes for Proposed Plan Change 1

Technical Leaders Group
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Purpose

Provide a summary of the Waikato Regional Plan (WRP) standards for Water Management Classes and a comparison of those standards with Attributes and associated bands being proposed for WRC Plan Change 1.

Existing Waikato Regional Plan and Water Management Classes

Section 3.2.4 of the WRP sets out the implementation methods - water management classes and standards. Method 3.2.4.1 (see Appendix 1) states how WRC will implement the classes as a basis for compliance with permitted activity rules and for assessing activities requiring resource consent.

In using the water quality standards as a basis for compliance with relevant permitted activity rules (3.2.4.1a) WRC acts on complaints received and water may be sampled to determine the extent and source of a contaminant and to assess the concentrations against the standards.

For point source consent applications, classes are implemented by having regard to the policy of each class and using the standards to provide guidance as one means of achieving the purpose of the class (3.2.4.1b, c).

Where more than one water management class applies to a water body, the strictest standard for permitted activities will apply. The standards apply after reasonable mixing of any contaminant with the receiving water.

There are four water management classes. Classes vary in standards and not all standards relate to the four contaminants and attributes in Plan Change 1 (PC1):

- The Surface Water Class does not include standards for any of the PC1 attributes. The standards include suspended solids, but refers to the fisheries classes.
- The Natural State Water Class has no numeric standards and contains narrative standards only (*“water quality and flow regimes of Natural State Waters shall not be altered in any way that may compromise their aquatic riparian habitat value for indigenous species”*).
- Relevant standards in the Contact Recreation Water Class are Black disc and *E.coli*, and in the Fishery Class are suspended solids (if converted into black disc) and ammoniacal nitrogen.

Comparison of water class standards and attributes

WRP Contact Recreation and Fishery class standards and PC1 attribute values are summarised in Table 1 and accompanying notes (Appendix 2). Where WRP Water class standards and PC1 attributes relate to the same contaminant, *they are still not directly comparable because they differ in sampling statistics and spatial application*.

WRP Water Management Class standards were derived from either the Third Schedule of the RMA or from the best technical information available at the time. The numerical standards define

thresholds below which Council, acting upon the technical information available at the time, was confident that the water bodies will always be suitable for the purpose for which they are being managed. The WRP allows for these thresholds to be exceeded as a consequence of case-by-case assessment of site-specific matters through the consent process provided that the objectives of the Plan are being achieved.

PC1 attributes and bands follow the requirements of the National Policy Statement for Freshwater Management (NPSFM) and use its associated National Objectives Framework (NOF), with the addition of clarity, which is based on best available technical information and applied as bands as for the NOF attributes.

PC1 bands for ammoniacal nitrogen and black disc are generally more stringent than those for Fishery Class, despite a different sampling statistic (see Appendix 2). Spatial distribution of waterways within the Fishery Class has not been assessed for this report.

Comparison of the *E.coli* standard and attributes are complicated by different timing of application (summer months only or all of the time), different sampling statistics (median and maximum values compared to 95th percentile) and different spatial distribution (selected water bodies (Appendix 2) or everywhere in PC1). Standards apply to receiving waters at the time of discharge, whereas attribute bands are to be achieved over time (through limits and targets).

[Acknowledgement](#)

This memo has benefitted from input and discussion with a range of Waikato Regional Council staff.

Appendix 1

3.2.4.1 Water Management Classes

Waikato Regional Council will implement water management classes:

- a. by using water quality standards for each class as a basis for compliance with relevant permitted activity rules
- b. by having regard to the policy of each class when assessing activities requiring resource consents that affect water bodies
- c. by using the Standards to provide guidance for consent applicants as one possible means of achieving the purpose of the class as described in the policies in Section 3.2.3
- d. by applying the strictest standard for permitted activities where more than one water management class applies to a water body
- e. by having regard to all of the relevant water management class policies that apply to a water body when making decisions on resource consent applications and where two policies address the same issue particular regard will be had to the more stringent policy in regard to this issue
- f. as a desired environmental outcome for non-regulatory methods in the Plan that relate to water bodies
- g. to provide Territorial Authorities with guidance for managing the effects of land use activities on water bodies
- h. by allowing new information on the standards and considerations, or the area covered by any class, to be included in assessments of resource consents.

Advisory Note:

- This class does not apply to geothermal surface water, that is, water heated to above 30 degrees Celsius. Policies 6, 7, 8, 9, 10 and 13 of Chapter 7.4 provide guidance on how the uses and values of the surface outflows of geothermal water will be managed.

Appendix 2

Table 1 compares the standards in the current Waikato Regional Plan water management classes with the limits and bands proposed by the CSG under Scenario 1 of the plan change.

Table 1. Comparison of standards for Water Management Classes and Plan Change 1 attributes

Water quality standards in current Waikato Regional Plan	Attribute limits in "Scenario 1" of proposed revision of plan (PC1)
<p>Contact Recreation Water Class (s 3.2.4.4) <u>Black disc</u> (see also Suspended Solids standards below; and s 3.2.4.6 (c)(iii)) Minimum value > 1.6 m</p> <p><u>E. coli</u> Median value < 126 per 100 mL from Dec to March, and maximum value < 235 per 100 mL</p>	<p><u>Black disc</u> Band A, median value > 3.0 m Band B, median in range 1.6 to 3.0 m Band C, median in range 1.0 to 1.6 m</p> <p><u>E. coli</u> Band A, 95% of values < 260 per 100 mL Band B, 95% of values in range 260 to 540 per 100 mL</p>
<p>Fishery Class (s 3.2.4.5) <i>Significant Indigenous Fisheries (s 3.2.4.5(a))</i> <u>Suspended solids</u> (see s 3.2.4.6 (c) (i)) Maximum < 80 g/m³; corresponds to Black disc, minimum > 0.2 m (for both parts of the Waikato/Waipā catchment)</p> <p><u>Ammoniacal-nitrogen</u> Maximum < 0.88 g/m³</p> <p><i>Significant Trout Fisheries (s 3.2.4.5(b))</i> <u>Suspended solids</u> (see s 3.2.4.6 (c) (ii)) Maximum < 25 g/ m³; corresponds to Black disc, minimum > 0.5 m (for both parts of the Waikato/Waipā catchment)</p> <p><u>Ammoniacal-nitrogen</u> – as above for Indigenous Fisheries</p>	<p><u>Suspended solids</u> – using Black disc as a surrogate Band A, median value > 3.0 m Band B, median in range 1.6 to 3.0 m Band C, median in range 1.0 to 1.6 m</p> <p><u>Ammoniacal-nitrogen</u> Band A, maximum < 0.05 g/m³, and median < 0.03 g/m³ Band B, maximum in range 0.05 to 0.40 g/m³; median in range 0.03 to 0.24 g/m³</p> <p><u>Suspended solids</u> – using Black disc as a surrogate Band A, median value > 3.0 m Band B, median in range 1.6 to 3.0 m Band C, median in range 1.0 to 1.6 m</p>

Contact Recreation

Black disc

The current WRP standard for visual clarity has a *minimum* value of 1.6 m and applies to a limited sub-set of waterways in the Waikato-Waipā catchment (see below). This standard, as written, appears to apply all the time, with no seasonal or flow exclusions. PC1 has three limits for black disc, based on *median* values. Band B is likely to be somewhat less stringent *at those locations where the WRP standard applies* as median values of 1.6 to 3.0 m mean that potentially up to half the values could be less than 1.6 m (i.e. lower than the WRP standard). Band C is likely to be less stringent than the WRP value, as half or more of the values can be less than 1.6 m. (The standard for Band A is likely to be broadly similar to the WRP standard although, again, minimum values could fall below 1.6 m).

E. coli

The WRP contains two standards for *E. coli*: (1) the median shall not exceed 126 *E. coli* per 100 mL, and (2) the maximum value shall not exceed 235 *E. coli* per 100 mL (section 3.2.4.4 b). The PC1 limits proposed are taken directly from the NOF and therefore meet the definition in the NPSFM for contact recreation (and represent the latest technical consensus on the matter). PC1 Band A would be less stringent *at those locations where the WRP standard applies* as potentially at least 5% of samples could exceed the WRP maximum limit. For Band B, an even greater proportion of samples could exceed the current maximum limit; indeed 5% could be higher than 540 per 100 mL. However, this comparison is confounded in that the WRP standard applies only during the summer months of 1 December to 1 March whereas the proposed limits in PC1 are not restricted to season – which is more difficult to meet is therefore difficult to determine but, in any case, only PC1 is in-line with the NPSFM and the objectives of the Vision & Strategy with respect to ‘swimmability’.

Fishery Class

a) Indigenous Fisheries

Suspended solids – Black disc equivalent

This part of the current WRP requires that any discharge of suspended solids should comply with the relevant standard in section 3.2.4.6 (c) (i), namely the maximum suspended solids concentration downstream of the discharge should be no more than 80 g/m³. Monitoring data for the Waikato and Waipā Rivers indicates that this concentration is likely to result in a Black disc clarity of about 0.2 m. That is, the WRP requirement that maximum concentration of suspended solids in the receiving water be < 80 g/m³ implies that the minimum Black disc clarity there should be 0.2 m. PC1 Bands A, B and C for Black disc (medians of 3.0 m, 1.6 m, and 1.0 m, respectively) are therefore likely to be more stringent than the WRP standard for suspended solids for indigenous fisheries as at least half of the values will need to exceed these limits – well above the implied WRP minimum of about 0.2 m.

Ammoniacal-nitrogen

The indigenous fisheries standards require that ammoniacal-nitrogen shall not exceed 0.88 g N/m³ (noting that this is not based on a pH and temperature adjustment, as is outlined in the NOF). The proposed maximum standards for ammoniacal-nitrogen in PC1 – namely 0.05 g N/m³ (Band A) and 0.40 g N/m³ (Band B) - are both substantially lower than the WRP standard and therefore more stringent.

b) Trout Fisheries

Suspended solids – Black disc equivalent

This part of the current WRP requires that any discharge of suspended solids should comply with the relevant standard in section 3.2.4.6 (c) (ii), namely the maximum suspended solids concentration

downstream of the discharge should be no more than 25 g/m³. Monitoring data for the Waikato and Waipa Rivers indicates that this concentration is likely to result in a Black disc clarity of about 0.5 m. As above, Band A of PC1 is therefore likely to be more stringent than the WRP standard for suspended solids for trout fisheries, and Band B is likely to be somewhat more stringent than the current standard. Depending on clarity variation at a site, Band C may be less stringent than the standard in the current plan.

Ammoniacal-nitrogen

The standard for ammoniacal-nitrogen for the protection of trout fisheries in the WRP is the same as the standard for indigenous fisheries (maximum < 0.88 g N/m³). So the proposed standards in PC1 are both more stringent than this WRP standard.

Spatial distribution of Contact Recreation

Within the Waikato and Waipa River catchments, the Contact Recreation Water Class applies to the following water bodies (see Regional Plan maps):

- Lakes
- Waikato River mainstem
- Waipa River mainstem

Part of or all of the following tributaries:

- Waipapa River
- Kakaho Stream
- Mangakino Stream
- Waipa Stream
- Pokaiwhenua Stream
- Hauoira Stream
- Kaniwhaniwha Stream
- Blue Bull Stream
- Ngakoaohia Stream
- Ngutunui Stream
- Mangawhitikau Stream
- Waitomo Stream