



Department of
Conservation
Te Papa Atawhai

Submission by

The Director-General of Conservation

on the

Proposed Waikato Regional Plan Change 1
pursuant to Clause 6 of Schedule 1, Resource Management Act 1991

To: Science and Strategy - Policy
Waikato Regional Council
Private Bag 3038
Waikato Mail Centre
Hamilton 3240

Submission from: The Director-General of Conservation

Submission on: Proposed Waikato Regional Plan Change 1 notified on 22 October 2016.

Provisions the submission relates to: The topics of submission, the Director-General of Conservation support or opposition and any relief sought are contained in detail on the following pages.

Trade competition: Pursuant to Clause 6 of Schedule 1 of the Resource Management Act (1991), the Director-General of Conservation confirm that they could not gain an advantage in trade competition through this submission.

Hearing: I **wish to be heard** in support of my submission; and will consider presenting a joint case at any hearing with other parties presenting on similar matters.

Signed by:



.....
David Speirs
Operations Director (Hauraki, Waikato, Taranaki)
Director-General of Conservation

Signed on behalf of the Director-General of
Conservation pursuant to an instrument of delegation.

A copy of the instrument of delegation
may be inspected at the Director-General's office.

Date: 8 March 2017

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1. Role of Department of Conservation

1. Department of Conservation (the Department or DOC) acting through the Director-General of Conservation (the Director-General), are the government agency charged with conserving New Zealand's natural and historic heritage. The Department was formed in 1987 when the Conservation Act was passed to integrate conservation management functions. This Act sets out the Department's functions and was created to promote the conservation of New Zealand's natural and historic resources.
2. The Department has responsibilities under the range of specific legislation it administers, including the Conservation Act, the Wildlife Act 1953, the Marine Reserves Act 1971, the Reserves Act 1977, the Wild Animal Control Act 1977, the Marine Mammals Protection Act 1978, the National Parks Act 1980. This legislation provides a broad context for the Department's advocacy using the processes in the Resource Management Act (RMA).
3. Submissions under the RMA are one of the tools the Director-General uses to fulfil its responsibilities as landowner on behalf of the Crown, and for the protection of wildlife and its habitats, marine mammals, freshwater fisheries, and to safeguard visitor experiences, and to implement the New Zealand Coastal Policy Statement and achieve sustainable management of the coastal marine area.
4. The Director-General is encouraged by the direction of proposed plan change 1 and is generally supportive of the intent of the proposed plan change to restore and protect water quality in the Waikato and Waipā Rivers by managing the discharge of contaminants where it may enter surface water or ground water and subsequently enter rivers, or directly into a water body.
5. The Director-General notes that 24 of the 59 lakes subject to proposed plan change 1 are within the public conservation estate and administered by the Department on behalf of the New Zealand public. This makes the land and water within the public conservation estate one of the most significantly affected by the proposed plan change.
6. The general reasons for this submission are that the decisions sought are necessary to ensure that proposed plan change 1:
 - a. achieves the purpose and principles of the Resource Management Act 1991;

- b. gives effect to the Vision & Strategy for the Waikato River 2008;
 - c. gives effect to the provisions of the New Zealand Coastal Policy Statement 2010;
 - d. gives effect to the National Policy Statement for Freshwater Management 2014.
7. Further specific reasons are set out in the General Submission and the Submission Tables below.
8. We seek the following decisions from the local authority:
- a. That the provisions of the proposed plan change that are supported, as identified in the General Submission and Submission Table be retained without amendment.
 - b. That the amendments, additions and deletions to the proposed plan change sought in the General Submission and Submission Table are made.
 - c. Further, consequential or alternative relief to give effect to the relief sought in the General Submission and Submission Table.
9. I wish to be heard in support of my submission.
10. If others make a similar submission, I will consider presenting a joint case with them at a hearing.

2. General Submission

2.1 Achieving the purpose of the Resource Management Act

11. The purpose of the RMA is the sustainable management of natural resources and physical resources. The RMA defines this to mean managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for the health and safety. However, sustainable management does not stop there. It requires that the use of resources also achieve;
 - (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
 - (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
 - (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.
12. The National Policy Statement for Freshwater Management (NPSFM) outlines water quality objectives. Overall freshwater quality within a region must be maintained or improved.
13. Past and current land use and discharge patterns, and a lack of proper allocation mechanisms for discharge has resulted in the current degraded states of the Waikato and Waipā Rivers. The focus on enabling people and communities to provide for their economic well-being has surpassed the consideration of safeguarding life-supporting capacity of the water, sustaining natural and physical resources for future generations and avoiding, remedying or mitigating adverse effects on the environment. The Director-General considers that this does not achieve the sustainable management purpose of the Act.
14. It is submitted that proposed plan change 1 needs to implement an allocation regime that ensures natural and physical resources are managed in a way to achieve the sustainable management requirements set by the RMA. While the allocation regime can be amended and reassessed as time goes on to ensure that it is achieving what is required, it needs to start today and begin work towards achieving the 80-year targets outlined

in the proposed plan change. In addition to the 10-year and 80-year targets set out in the proposed plan change, additional 20-year targets are appropriate. This will ensure ongoing improvement toward the long term 80-year targets is achieved once the 10-year short term targets have been achieved.

15. To implement an efficient allocation regime, the plan should take the following steps:
 - a. The plan should state the maximum catchment load of contaminants (to provide certainty to resource users and of environmental outcomes); and
 - b. The plan should allocate the maximum catchment load among land uses in the most efficient way, which the Director-General considers to be using a Land Use Capability (LUC) based approach whereby land type including slope, soil type, drainage and geology are the key determinants; and
 - c. The plan should ensure that activities which would cause the maximum catchment load to be exceeded are avoided (to give effect to the direction in Policy A NPSFM to avoid over allocation); and
 - d. In catchments that are already over allocated, the plan should put in place methods to phase out over allocation over time (to give effect to Policy A NPSFM).

16. The allocation regime proposed in the proposed plan change is to effectively maintain the status quo for most waterbodies in terms of the level of contaminants entering the water. There is little direction or incentive to reduce contaminant discharge or to change land use practices. Given the currently degraded state of the regions waterways, the Director-General considers that this response will not achieve the sustainable management direction of the RMA. It continues to allow contaminants to be discharged into waterbodies at levels that does not ensure ecosystem health or water quality sufficient for recreation.

17. The Director-General seeks that the proposed plan change be amended to provide for an allocation regime that only permits the discharge of contaminants up to a level that ensures the limits and objectives for the freshwater management unit can be achieved. Where this level of contaminants has already been exceeded, the targets needs to be set with clear implementation methods (as detailed below) to ensure that water quality improves over the timeframe set. This regime needs to take account of the slope, soil type, drainage and geology of the land and

exclude current land use and current water quality. This will enable the flexibility of choice for land use through allocation based on LUC while managing the discharge of contaminants at a level that ensures life-supporting capacity and the reasonably foreseeable needs of future generations is achieved.

2.2 Vision and Strategy for the Waikato River

18. The Vision and Strategy for the Waikato River was developed and published in 2008. During 2010, Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 and the Ngaati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010 passed into law following treaty settlement negotiations as enabling legislation for the Waikato River Authority. In 2012 Ngaa Wai o Maniapoto (Waipā River) Act 2012 was passed into legislation which extended the boundaries of the area that the Vision and Strategy applies to including all of the Waipā River.
19. The scope of the vision and strategy contained in legislation is to recognise the national importance of the Waikato and Upper Waipā Rivers and their contribution to New Zealand's cultural, social, environmental and economic wellbeing. It applies to the Waikato and Upper Waipā Rivers and activities within the catchments effecting the rivers.
20. The legislation above outlines that the vision and strategy prevails over section 59-77 of the RMA relating to the preparation of regional policy statements and plans, and district plans. It also prevails over any inconsistent provision in a national policy statement and the New Zealand Coastal Policy Statement and is deemed to be part of the Waikato Regional Policy Statement.

2.3 Coastal Environment & New Zealand Coastal Policy Statement 2010

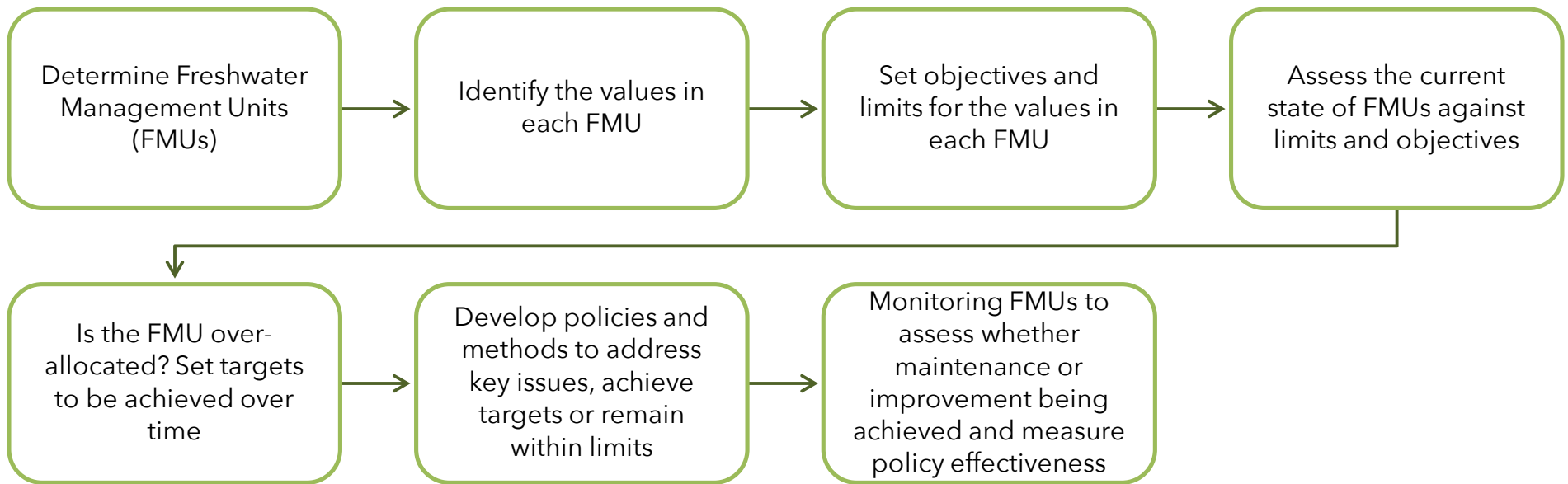
21. The National Policy Statement for Freshwater Management states that the management of coastal water and fresh water requires an integrated and consistent approach. The New Zealand Coastal Policy Statement (NZCPS) itself acknowledges that one of the key issues facing the coastal environment is "poor and declining water quality in many areas as a consequence of point and diffuse sources of contamination, including stormwater and wastewater discharges".

22. As notified, proposed plan change 1 does not give appropriate consideration to the relationship between freshwater quality and the water quality of the coastal environment.
23. Objective 1 of the NZCPS is particularly relevant to water quality in the coastal environment. It states *"To safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by... Maintaining coastal water quality, and enhancing it where it has deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity"*.
24. The proposed plan change must give effect to the NZCPS. Given that the ultimate receiving environment for water from the entire Waikato and Waipā River catchments is the coastal environment at Port Waikato, the proposed plan change therefore must address activities that affect water quality in the coastal environment. The Director-General is aware that sedimentation at Port Waikato is an issue given the State of the Environment Reporting (SoE) which concludes that there is "unsatisfactory" turbidity about 75% of the time. It is also recorded in the SoE that Port Waikato is the worst out of the seven sites that are sampled around the Waikato Region. Sediment plumes are also visible from aerial images at Port Waikato.
25. The Director-General considers it is appropriate to include an objective in the plan to address the 'mountains to sea' nature of catchments. The Director-General seeks to ensure that freshwater ecosystems from the mountains to the sea are restored and consideration of estuaries as part of the catchment are vital to achieving this. Sediments and nutrients for the Region ultimately accumulate at the Waikato Estuary.
26. Shellfish monitoring data in the SoE from 1999-2013 indicates that shellfish at Port Waikato are of unsatisfactory quality approximately 87.5% of the time. <https://www.waikatoregion.govt.nz/Environment/Natural-resources/coast/How-healthy-are-our-estuaries/Estuarine-water-quality-monitoring-map/Port-Waikato/#Graph%20information>
27. At Risk Seagrass species are sensitive to reduced light levels. Increased turbidity in the Waikato Estuary has seen a decline in the extent of seagrass species. The Director-General seeks a reduction in turbidity in the Waikato Estuary to ensure that turbidity is not at an "unsatisfactory" level more than 30% and for the plan to ensure seagrass recovery. To achieve this, on-going monitoring and an adaptive approach to management is required.

2.4 National Policy Statement for Freshwater Management 2014

28. The National Policy Statement for Freshwater Management 2014 (NPSFM) is about recognising the national significance of freshwater for all New Zealanders and Te Mana o te Wai. It sets out objectives and policies that direct local government to manage water in an integrated and sustainable way. The NPSFM provides a national objectives framework to assist regional councils and communities to more consistently and transparently plan for freshwater objectives.
29. The NPSFM states that freshwater planning will require an “iterative approach that tests a range of possible objectives and methods for their achievement, including different timeframes for achieving objectives”.
30. The leading water quality objectives in the NPSFM seek to, at Objective A1, safeguard the life-supporting capacity; ecosystem processes and indigenous species including their associated ecosystems, of freshwater and the health of people and communities, at least as affected by secondary contact with fresh water; in sustainably managing the use and development of land, and of discharges of contaminants. Objective A2 seeks that the overall quality of fresh water within a region is maintained or improved while; protecting the significant values of outstanding freshwater bodies; protecting the significant values of wetlands; and improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.
31. The objectives provide the regional council with clear direction on water quality for the Waikato and Waipā Rivers. The Director-General is concerned however, that there have been no outstanding freshwater bodies identified in the proposed plan change, nor have the significant values of wetlands been identified or protected. The Director-General is also concerned that, particularly in the instance of lakes, in some cases there are no improvements to water quality sought, even though the quality of the freshwater in these lakes has been degraded by human activities.
32. The National Objectives Framework requires, at Policy CA2, every council to consider how national values apply in their local/regional circumstances and to identify values for each freshwater management unit. This includes the compulsory values and can include any other values considered appropriate. It appears that there have been no values identified for the individual Freshwater Management Units in proposed plan change 1.

33. It is also not clear what the freshwater objectives of the proposed plan change are nor is it clear what the limits are. To give effect to the NPSFM, these need to be clearly identified. The NPSFM requires that the limits are set at levels that achieve the freshwater objectives. It is not clear from the proposed plan change if this has happened.
34. Method(s) need to be put in place to achieve the limits and targets. Very few methods are identified in the proposed plan change to achieve the limits. This is required. Leaving the determination of methods for achieving limits and targets for another 10 years results in rivers, lakes and wetlands remaining in their currently degraded state for an indeterminate period of time, with the potential for further decline. This does not achieve the purpose of the RMA which requires, among other things, that the life-supporting capacity of air, water, soil and ecosystems be sustained. As a result, there is potential for further species to be lost. This is also inconsistent with the objectives of the NPSFM.
35. The Director-General seeks that the Council rectify the lack of certainty created through the proposed plan change by clearly stating the freshwater values for each FMU, freshwater objectives, and limits set to achieve the freshwater objectives. In addition, identification of appropriate methods to achieve the limits are needed to ensure that both the purpose of the RMA and the objectives of the NPSFM are given effect to.
36. The following diagram is useful to describe the process outlined in the NPSFM for identifying values and development attributes, objectives and limits to support those values.



2.5 Whangamarino Wetland

37. The Whangamarino Wetland has been recognised as a wetland of international importance since 1989 when it was recorded as a Ramsar site under the Ramsar Convention. The wetland spans some 7000ha of marshes, swamps, fens and peat bogs around the Whangamarino and Maramarua Rivers. It is the second largest bog and swamp complex in the North Island. A number of threatened plants have been recorded in the

wetland including the water milfoil, the swamp helmet orchid and the club moss. The wetland is rich in mosses and 13 new species have been added to the list of New Zealand flora from this area. Lichens are also well represented here.

38. The Whangamarino wetland is also an important habitat for a number of threatened fauna including the Australasian bittern (20% of the New Zealand population reside in the wetland), grey teal, spotless crake, North Island fernbird and black mudfish.
39. Restoration of the Whangamarino is an active and important project for the Department of Conservation. The Department's Arawai Kākāriki programme at Whangamarino aims to:
 - maintain or enhance water regimes, water quality and the condition of wetland habitat,
 - maintain and enhance species diversity, including threatened species,
 - increase community awareness and appreciation of the value of the wetlands,
 - maximise community involvement in management, restoration and sustainable land use,
 - improve facilities and opportunities for the public to visit the site,
 - increase understanding of wetland function and management to develop good wetland restoration and monitoring tools.
40. These aims are being achieved through the following actions:
 - Fencing wetland boundary to exclude livestock.
 - Controlling plant pests.
 - Intensive trapping of animal pests in the Northern part of the Wetland.
 - Restoring areas bordering the wetland which have been retired from grazing.
 - Advocating for wetland protection through education and statutory processes, including addressing catchment water quality issues.
 - Maintaining and monitoring the Whangamarino Weir, designed to retain appropriate groundwater and surface water levels, so preventing summer dryness of swamp and marsh areas, desiccation of the fen and bog areas and loss of wildlife habitat.
41. As a result of the partial withdrawal of proposed plan change 1 on 3 December 2016, the Whangamarino Wetland has been excluded from the area subject to the proposed plan change. The partial withdrawal has resulted in only part of catchments being subject to the proposed plan change. The Director-General seeks that the original scope and extent of the plan change be re-included to capture the Whangamarino Wetland and ensure that the restoration of water quality and protection of the wetland is fully recognised as an important element of proposed plan change 1.

42. The Director-General seeks specifically that the Whangamarino be re-included into the proposed plan change as a separate Whangamarino Wetland FMU, as identified in the map included as Appendix D. It is also sought that the attributes and values established for the Whangamarino Wetland FMU, as outlined in Appendix E and F are included. These need to be accompanied by a refined objective and policy framework to acknowledge the importance of the Whangamarino, with the key to achieving this being the implementation methods and rules outlined in detail in the tables below.

2.6 Wetlands - general

43. The RMA requires local councils to recognise and provide for the protection of wetlands as a matter of national importance under sections 6(a) preservation of natural character; 6(b) preservation of outstanding features; and section 6(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. Under s6(c), due to the representativeness and sometimes natural rarity of these habitats, many wetlands in the Waikato should be considered significant.

44. The Director-General seeks greater attention be paid to wetland systems through the proposed plan change to appropriately give effect to the requirements of the RMA and to ensure that the significant values of these complex ecosystems are appropriately recognised and protected.

45. The Director-General considers the development of attributes and values to protect the significant values of all wetlands in the Waikato Region is required. Wetland attributes have been developed for other regional council planning processes, notably Greater Wellington Regional Council, this indicated that for ecosystem health the key attributes were¹²:

- Plants
- Fish

¹ Source: *Technical guidance document: Aquatic ecosystem health and contact recreation outcomes in the Proposed Natural Resources Plan* (Greenfield et al. 2015)

<http://www.gw.govt.nz/assets/Plans--Publications/Regional-Plan-Review/Proposed-Plan/TechnicalguidancedocumentAquaticecosystemhealthandcontactrecreationoutcomesintheProposedNaturalResourcesPlan.PDF>

² <http://www.gw.govt.nz/assets/Plans--Publications/Regional-Plan-Review/Draft-Regional-Plan-docs/2014-Technical-Reports/RecommendedchangestoScheduleHattributesoutcomesforthedraftNaturalResourcesPlan-Wetlands.pdf>

- Mahinga kai
 - Nutrient status
 - Hydrology
 - Sedimentation rate
 - Wetland extent
46. The attributes recommended for wetlands were narrative, not numeric. This reflects the fact that while wetland research and ecological understanding is well developed, regional councils have not established regional monitoring programmes which limits implementation of numeric values, except for at well studied locations, such as Whangamarino Wetland.
47. A national project to develop wetland attributes has also been undertaken (Clarkson et al. 2015)³. This identified that the “variables regularly identified as explaining the variation in ecosystem health for bogs, fens and swamps included:
- proportion of wetland area remaining
 - nitrate integrity (GIS layer predicting nitrogen inputs from catchment)
 - soil total nitrogen
 - soil total phosphorus
 - and soil N to P ratio
48. The Director-General understands the Ministry for the Environment are planning to invest more in the development of wetland attributes for the next iteration of the National Objectives Framework (NOF), however the Director-General considers that this process does not restrict council from initiating a planning approach for wetlands that is consistent with best practice.
49. The Director-General seeks that the Council identify the attributes (likely narrative rather than numeric) that relate to protecting the significant values of wetlands. To achieve this, the Director-General recommends the following steps:
- a. Adopt narrative objectives that relate to water quality (Table below)
 - b. Establish a programme for benchmarking of wetland nutrient and sediment status and its relationship to ecosystem health (plants, fish, mahinga kai)
 - c. Establish wetland numeric targets by 2025

³ https://www.landcareresearch.co.nz/_data/assets/pdf_file/0018/104454/LC1933-wetland-quantitative-limits.pdf

50. The table in Appendix G to the submission outlines what the Director-General considers are appropriate attributes for ensuring ecosystem health is achieved in wetlands in the Waikato Region

2.7 Lakes - general

51. The Director-General is concerned with the general lack of focus on the priority of lakes in the proposed plan change. While the Director-General acknowledges the priority of rivers, the proposed plan change overlooks the effort (and resources) that has gone into many of the lakes to date (particularly on public land) and the urgent need to reduce external nutrient loads to many of the lakes. The absence of any direction on priority for lakes means that the proposed plan change does not recognise, build on and support, or capitalise on, the extensive work that has been done to date as well as it could.
52. The proposed plan change does not adequately recognise the poor condition of many lakes and the significant gap between the current state of water quality and the swimmable and fishable goals set in the Vision and Strategy. There is generally a lack of targets for the lakes and a general lack of certainty around what actions will be implemented to improve lake water quality. This is especially important as water quality in lakes can take a long time (i.e. 15-20 years) to shift in response to changes in nutrient loading.
53. The Director-General considers that the proposed plan change lacks aspiration for lakes that are already better than D band for some attributes, or only just exceed the threshold for D band. These lakes have an 80-year target of 'maintain' at current levels which doesn't capitalise on existing initiatives at them, or seek to achieve their restoration potential.
54. Submerged aquatic plants play a significant role in maintaining and stabilising lake water quality, particularly in shallow lakes. The Director-General seeks that the proposed plan change provides greater protection to submerged aquatic plants in lakes where they currently exist, given that most Waikato lakes are already devegetated and have shifted from a clear water-macrophyte dominated state to a turbid-algal dominated state. The restoration potential for lakes will diminish with time after they become devegetated (as native seedbank viability reduces) and restoration costs and uncertainty increase.
55. The proposed plan change does not implement many of the Best Management Practices that have long been promoted (by Council) for properties around the lakes, in order to improve water quality and ecological values at the lakes.

56. The Director-General also considers that work is urgently required to assess the effectiveness of different catchment management scenarios for lakes. While the proposed Plan Change 1 process has modelled the river systems, the equivalent work hasn't occurred for the lakes and it is considered that this work is urgently required. The Director-General acknowledges the desktop modelling work that Waikato Regional Council undertook on 44 shallow lakes in 2006 (Jenkins & Vant 2007⁴), which indicated that there was scope to achieve average reductions of 7% in the nitrogen load when moving from 'average' to 'best practice', or up to 36% under a more rigorous 'potential practice'. In relation to phosphorus load to the lakes, 'best practice' management resulted in an average reduction of 18% across all lakes, whilst the more rigorous 'potential practice' regime led to an average reduction of 39% in phosphorus over all the lakes. Appendix I to this submission provides amended attributes the Director-General seeks be included for lakes while Appendix H to this submission outlines the lakes in the catchment of highest priority.

2.8 Water quality attributes

57. The Director-General considers that the proposed FMUs and the different states of the values they support do not seem to have been taken into account when determining a suitable set of attributes for water quality. These were done at the region-wide or broad river-type context. As a result, attributes that could be highly relevant in some circumstances have not been included. Of particular concern is the lack of attributes relating to trophic state and contributing nutrients in any of the tributaries of the Waikato and all of the waterways in the Waipā catchment. This approach fails to manage the potential for nuisance periphyton or macrophytes in tributary waterways and thus the only attributes associated with ecosystem health are nitrate and ammonia toxicity in these waters. The Director-General is unclear how this will provide for native species or ecosystem processes, or for cumulative management to reach nutrient targets in the mainstem of the Waikato. This is a concern given the Plan's definition of ecosystem health and mahinga kai values specifically reference native fish and other native species for their intrinsic and human use values.

58. In many of the tributaries of the Waikato River the nitrate, ammonia, faecal contaminants and water clarity all need to improve from the current state. Some sites are identified with extremely high nitrate and/or ammonia concentrations in the short-term (although substantial improvement is not planned over that period). In the Waipā River and Waikato tributaries, long-term (80-year) E. coli targets are consistent with the "minimum

⁴ Jenkins & Vant . 2007. Potential for reducing the nutrient loads from the catchments of shallow lakes in the Waikato region - <https://www.waikatoregion.govt.nz/services/publications/technical-reports/tr/tr200654>

acceptable state” for primary contact recreation and carry a “moderate risk of infection”⁵. Long-term clarity targets for the Waipā catchment and all tributaries are often within the range considered “unsuitable for bathing use” by Smith and Davies-Colley (1992). All lakes have clarity set at the “unsuitable” range.

59. Planktonic algae, total nitrogen and total phosphorus are managed in the mainstem of the Waikato using the lake-fed attributes from the NOF. Some of these are set for maintenance of current water quality, while others are targeted for improvement. All lakes (dune, riverine, volcanic and peat lakes) are set at national bottom lines for Chlorophyll a, total nitrogen and total phosphorus (unless water quality is better than these, in which case it is to be maintained). The Director-General was not able to locate (in the technical reports accompanying the proposed plan change), the current state of ecosystem health. This would inform the setting of attributes and limits/targets at levels specific to provide for the values in specific locations.
60. The Director-General considers that in order to achieve the goals of the Vision and Strategy and the NPSFM and RMA relating to healthy biodiversity, swimmability and fishability in the Waikato and Waipā Rivers further attributes, limits and methods need to be included in the proposed plan change. Sediment attributes and limits need to be set in addition to clarity. The Director-General also seeks that temperature, dissolved oxygen and MCI attributes and limits need to be set.
61. The Director-General considers that the management of the contaminants specified in the Vision and Strategy (nutrients, faecals and sediment) needs to be carried through into the Plan for the majority of waterways, including the whole Waipā catchment and all tributaries of the Waikato, lakes, wetlands and the coastal environment. Nutrient and biological attributes, limits or targets need to be set for all these waterways to make a positive contribution to water quality in the Waikato River or at the local level or within the Waipā catchment and Waikato tributaries themselves. This is particularly relevant, for example, when patterns of fish diversity are taken into account. Tributaries play an important role as fish habitat, particularly those closest to the sea. Without adequate water quality and habitat availability the tributaries of the Waikato and the entire Waipā catchment are unlikely to maintain or improve in terms of ecosystem health. Consequences with respect to declining or threatened fish and invertebrate species may be irreversible in the long-term.
62. The Director-General considers that new water quality attributes and limits/targets need to be set to ensure that ecosystem health is achieved and that the Vision and Strategy of the Waikato River is given effect to. These tables are included in this submission as:

⁵ According to the attribute state narrative from the NOF.

- a. Appendix A and B (river/stream catchments)
- b. Appendices D, E and F (proposed Whangamarino FMU)
- c. Appendix G (Wetlands attributes)
- d. Appendix H and I (Highest priority lakes and lake attributes)
- e. Appendix J (Existing lake management and planning)

3. Submission points on specific parts of the Proposed Waikato Regional Plan Change 1

63. Submission points set out below include a description of the relief sought. In the case of each submission point, any relief sought includes any consequential amendments to other provisions of the Proposed Plan that are necessary to give effect to that relief. Where specific suggestions for changes to the wording of provisions are included in the relief sought, other wording that achieves the same outcome is appropriate.

4. Re-inclusion of withdrawn provisions

64. Following the notification of proposed plan change 1, some provisions of proposed plan change 1 were withdrawn on 3 December 2016 to enable Waikato Regional Council to undertake consultation with Hauraki iwi authorities over the north-eastern portion of the Waikato River Catchment.

65. The withdrawal has resulted in sections of Freshwater Management Units being removed, resulting in the inclusion of only parts of some catchments. The re-inclusion of these provisions is sought to ensure that all catchments influencing the Waikato and Waipā Rivers are appropriately reflected in the proposed plan change. The re-inclusion of the individual provisions is outlined in the table below.

Provision	Re-include	Discussion	Relief sought
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All withdrawn provisions to be re-included

3.11 Map 3.11-1	Re-include		The Director-General seeks that the map labelled 3.11-1 showing the general catchment boundaries be re-included as originally notified.
3.11 Area covered by Chapter 3.11	Re-include		The Director-General seeks to re-include the text of Provision 3.11 as originally notified.
Objective 6 and reasons for adopting Objective 6.	Re-include		The Director-General seeks to re-include Objective 6 and its reasons for adoption as originally notified with amendments as outlined below.
Policy 8: Prioritised implementation/Te Kaupapa Here 8: Te raupapa o te whakatinanatanga	Re-include	<p>The Whangamarino Wetland is an internationally important wetland. The protection and restoration of the wetland are of significant importance to the Department and are critical to the sustainable management of the wetland.</p> <p>The Director-General seeks to ensure that the Whangamarino Wetland is considered a priority in the improvement of water quality in the Whangamarino catchment.</p>	The Director-General seeks to re-include the Whangamarino Wetland as a priority area under Policy 8 as originally notified.
Policy 15: Whangamarino Wetland/Te Kaupapa Here 15: Ngā Repo o Whangamarino	Re-include	<p>The Whangamarino Wetland is an internationally important wetland making the protection and restoration of the wetland of significant importance regionally, nationally and internationally.</p> <p>The Director-General considers that the policy, as originally notified, has a narrow focus that does not consider the complex nature of the wetland system of the</p>	<p>The Director-General seeks that Policy 15 be re-included as originally notified and revised to ensure the policy recognises all the important wetland values and the complex nature of Whangamarino Wetland, and that targets are set to:</p> <ul style="list-style-type: none"> • Reduce high rates of sediment deposition in the wetland, including

	<p>Whangamarino. The Whangamarino comprises marsh, swamp, fen and bog wetland types which are all vulnerable to excess nutrient and sediment inputs which are exacerbated by changes in hydrology.</p> <p>The Policy also needs to refer to both the short-term and long-term restoration of the Whangamarino Wetland to achieve targets. These targets need to achieve the following:</p> <ul style="list-style-type: none"> • Reduce high rates of sediment deposition in the wetland, including the swamp, marsh and fen and bog wetland types • Reduce the load of phosphorus transported into the wetland • Ensure water levels are ecologically appropriate in that they do not exacerbate water quality effects, and also protect critical habitats. • Ensure any impacts of the Lower Waikato Waipā Flood Control Scheme are avoided, remedied or mitigated so as to not adversely affect the sustainable management of the Whangamarino Wetland • Promote the natural succession of the wetland system, allowing for natural peatland (bog) development (no further loss of bog). <p>The Director-General also seeks that wording of Policy 15 is strengthened to provide clear and certain direction for the Whangamarino including by amending the first sentence to remove “and make progress towards restoration” and to</p>	<p>the swamp, marsh and fen and bog wetland types</p> <ul style="list-style-type: none"> • Reduce the load of phosphorus transported into the wetland • Ensure water levels are ecologically appropriate in that they do not exacerbate water quality effects, and also protect critical habitats • Ensure any impacts of the Lower Waikato Waipā Flood Control Scheme are avoided, remedied or mitigated so as to not adversely affect the sustainable management of the Whangamarino Wetland • Promote the natural succession of the wetland system, allowing for natural peatland (bog) development (no further loss of bog). <p>As well as clear, strengthened wording around the protection and restoration of the Whangamarino Wetland and by avoiding further loss of the bog ecosystem.</p> <p>The Director-General also seeks that wording of Policy 15 is strengthened to provide clear and certain direction for the Whangamarino including by amending the first sentence to remove “and make progress towards restoration” and to instead state “protect and</p>
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		instead state “protect and restore the” and at subsection a. to remove replace “reduce and minimise” with “avoid”.	restore the” and at subsection a. to remove replace “reduce and minimise” with “avoid”.
Implementation/Methods 3.11.4.4.	Re-include with amendment	<p>The Director-General seeks that Method 3.11.4.4 as it related to Whangamarino Wetland be re-included as originally notified.</p> <p>This implementation method is discussed in further detail below, including the separation of the Whangamarino Wetland into its own, separate FMU.</p>	The Director-General seeks that Method 3.11.4.4 be re-included as originally notified with amendments that provide for a separate method relating to the Whangamarino Wetland which ensures that a Whangamarino Wetland Catchment Management Plan is developed within 2 years from the date of the proposed plan change being made operative. The method also needs to ensure that the other aspects of 3.11.4.4 as originally notified including active pest weed and fish management, support for research and testing, support restoration programmes are retained. As referred to in greater detail below
Table 3.11-1	Re-include		Re-include the content of Table 3.11-1 as originally notified, subject to amendments sought in further detail in the submission below.
Table 3.11-2	Re-include		Re-include the content of Table 3.11-2 as originally notified, subject to amendments sought in further detail in the submission below.
Map 3.11-2	Re-include		Re-include map 3.11-2 as originally notified.
“Sub-catchment” in Glossary	Re-include		Re-include the number of sub-catchments to 74 as originally notified.

Consequential amendments Table 3.7	Re-include		Re-include the entirety of Table 3.7. identifying consequential amendments to the Regional Plan as outlined in the proposed plan change as originally notified and in further detail below.
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5. Values and uses for the Waikato and Waipā Rivers

Provision	Support/ Opposition	Discussion	Relief sought
3.11.1.1 Mana Atua – Intrinsic Values			
Freshwater Management Unit Values	Amendment sought	<p>It is not clear to the Director-General what the Council has identified as the values of each Freshwater Management Unit. Values of each FMU need to be clearly identified to provide appropriate guidance about what the freshwater objectives for the FMU should be to remain within the limits or achieve targets.</p> <p>This aligns with the requirements of the NPSFM.</p>	The Director-General seeks that, to give effect to the NPSFM, the Council determine values for each Freshwater Management Unit to enable objectives for the FMU to be developed that achieve the limits or that set targets for water quality in the particular catchment.
<p>Intrinsic values - History</p> <p>Ko te whakapapa o ngā iwi ki ōna awa tūpuna / Historical relationships between the rivers and River Iwi</p> <p>Ko ngā kōrero o neherā / History</p>	Support with amendment	<p>The Director-General supports the intent of the intrinsic value for history but seeks to include the relationship of River Iwi with lakes, wetlands and the coastal environment as well as rivers.</p> <p>This will give effect to the requirement under s.6 of the RMA to recognise and provide for, as a matter of national importance, the relationship of Māori and their culture and traditions with their ancestral lands, water, sites wāhi tapu and other taonga.</p>	The Director-General seeks that the value be expanded to include relationships of River Iwi to lakes, wetlands and the coastal environment as well as rivers.
Intrinsic values - Ecosystem health	Support with amendment	<p>The Director-General seeks the following amendments to the ecosystem health value:</p> <ul style="list-style-type: none"> Amend the 4th bullet point to recognise that while wetlands are important for attenuation of natural flood 	The Director-General seeks that the intrinsic value for ecosystem health be retained but amended as follows or similar relief that has the same affect:

<p>Ko te hauora me te mauri o te wai / The health and mauri of water</p>		<p>events, artificial flood storage can have detrimental effects on ecosystem health</p> <ul style="list-style-type: none"> • Amend the 4th bullet point to recognise that while wetlands do have a nutrient/cycling function, they also need clean freshwater to achieve ecosystem health • Insert a new bullet point to protect and restore lakes so they are dominated by submerged native aquatic plants • Insert a new bullet point to ensure lakes exhibit good water quality and are resilient to environmental disturbance and are not algal dominated • Insert a new bullet point to support diverse native species populations including freshwater fish, birds and invertebrates in lakes and wetlands • Insert a new bullet point to ensure that the ecosystem health of wetlands exhibit low disturbance from sediment, nutrients and water level change affecting water quality, are resilient to environmental disturbance and are dominated by native wetland vegetation • Insert a new bullet point to ensure that the extent and ecological integrity of all wetlands is maintained and enhanced, providing for ecosystem services (water quality and ecosystem health). <p>The Director-General also seeks that the proposed plan change recognise the significance of those individual lakes, wetlands and rivers of regional, national or international significance that have high biodiversity/conservation value.</p>	<ul style="list-style-type: none"> • Amend the 4th bullet point to recognise that while wetlands are important for attenuation of natural flood events, artificial flood storage can have detrimental effects on ecosystem health • Amend the 4th bullet point to recognise that while wetlands do have a nutrient/cycling function, they also need clean freshwater to achieve ecosystem health. • Insert a new bullet point to protect and restore shallow lakes so they are dominated by submerged native aquatic plants (where they would naturally have occurred) • Insert a new bullet point to ensure lakes exhibit good water quality and are resilient to environmental disturbance and are not algal dominated • Insert a new bullet point to support diverse native species populations including freshwater fish, birds and invertebrates in lakes and wetlands
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			<ul style="list-style-type: none"> • Insert a new bullet point to ensure that the ecosystem health of wetlands exhibit low disturbance from sediment, nutrients and water level change affecting water quality, are resilient to environmental disturbance and are dominated by native wetland vegetation • Insert a new bullet point to ensure that the extent and ecological integrity of all wetlands is maintained and enhanced, providing for ecosystem services (water quality) and ecosystem health). <p>The Director-General also seeks that the proposed plan change recognise the significance of those individual lakes, wetlands and rivers of regional, national or international significance that have high biodiversity/conservation value.</p>
Intrinsic values - new	New	The Director-General is generally supportive of the value for ecosystem health to the extent that it reflects the compulsory national value stated in the NPSFM. The Director-General is	The Director-General seeks to expand on the existing broadly defined ecosystem health value to effectively

		<p>concerned however that having one broadly defined ecosystem health value makes it difficult to ensure attributes, limits and targets are effective at maintaining or improving ecological health, ecosystem processes or biological diversity at particular locations.</p> <p>The Waikato-Waipā catchments are large and ecologically diverse. There are 15 species of native freshwater fish present within the Waikato River catchment, 14 of which are also found in the Waipā catchment. Seven of these species are listed as 'At Risk, Declining' and two as 'Threatened, Nationally Vulnerable' under the NZ Threat Classification⁶ (detailed in the table contained in Appendix C). Black mudfish are found at a number of sites in the Waikato-Waipā catchments.</p> <p>Two species of kākahi (freshwater mussel) have been recorded in the catchments:</p> <ul style="list-style-type: none"> • <i>Echyridella aucklandica</i> (Threatened, Nationally Vulnerable⁷) - in Waikato River catchment but not within Waipā. • <i>Echyridella menziesii</i> (At Risk, Declining) - in both catchments. 	<p>provide for ecological health, ecosystem processes and biological diversity at specific locations. This should include, as a minimum additional values to recognise:</p> <ul style="list-style-type: none"> • inanga spawning • native fish migration • biodiversity hotspots (areas that are particularly outstanding due to their high proportion of native species and their role as a native species 'refuge') • threatened/at risk species
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⁶ Goodman, J.M.; Dunn, N.R.; Ravenscroft, P.J.; Allibone, R.M.; Boubee, J.A.T.; David, B.O.; Griffiths, M.; Ling, N.; Hitchmough, R.A.; Rolfe, J.R. 2014: Conservation status of New Zealand freshwater fish, 2013. New Zealand Threat Classification Series 7. Department of Conservation, Wellington. 12 p.

⁷ Grainger, N.; Collier, K.; Hitchmough, R.; Harding, J.; Smith, B.; Sutherland, D. 2014: Conservation status of New Zealand freshwater invertebrates, 2013. New Zealand Threat Classification Series 8. Department of Conservation, Wellington. 28 p.

		<p>There are also three other species of macroinvertebrate that are listed as Threatened, Nationally Vulnerable, one that is listed as Threatened, Nationally Critical, and ten that are Data Deficient.</p> <p>Īnanga spawn in the lower Waikato River, amongst riparian vegetation at the upper tidal extent during high spring tides. Early records suggest that this occurs on the Waikato River downstream of Tuakau, although modelling of the MHWS90, LiDAR data and any recent spawning records held by WRC would better predict the available spawning habitat for Īnanga, similar to methods used by Canterbury Regional Council. Determining the extent of Īnanga spawning and spatially representing that value would improve the resolution of the ecosystem health value for this species of declining native fish.</p> <p>Freshwater Environments of New Zealand (FENZ) predicts layers for a number of ecological and resource pressure gradients. The upper Waikato and Waipā Rivers rank highly for achieving the objective of protecting a representative range of different ecosystem types.</p> <p>Using FENZ, fish diversity is predicted to be highest in the Waipā and tributaries of the middle and lower Waikato River. This is typical of fish distribution in New Zealand (Jowett and Richardson, 1996) due to the requirement for access to the sea for diadromous species. Elevation and distance inland are the biggest predictors of native fish diversity as a result. In order to provide for the diversity and native fish components of ecosystem health and mahinga kai values, areas with high potential diversity will need to</p>	
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		be managed to provide adequate water quality and habitat for migratory native fish.	
<p>Intrinsic values - Natural form and character</p> <p>Ko te hauora me te mauri o te taiao / The health and mauri of the environment</p>	Support with amendment	<p>The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.</p> <p>This will ensure that the value gives effect to s.6(a) which requires that the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, is recognised and provided for.</p> <p>The Director-General also seeks that the value be amended to accurately reflect the broad range of attributes that contribute to the natural character of lakes and rivers and their margins, wetlands and the coastal environment such as:</p> <ul style="list-style-type: none"> • Natural elements, processes and patterns, • Biophysical, ecological, geological and geomorphological aspects • Natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs • The natural movement of water and sediment including hydrological and fluvial processes • The natural darkness of the night sky (in the coastal environment) • Places or areas that are wild and scenic • A range of natural character from pristine to modified, and • Experiential attributes, and their content or setting. <p>The Director-General is concerned that there is a lack of specificity contained in the proposed plan change to show how natural</p>	<p>The Director-General seeks that the natural form and character value be retained but expanded to include lakes, wetlands and the coastal environment as well as rivers.</p> <p>The Director-General also seeks the range of attributes that contribute to natural character are identified and recognised. This may include such attributes and characteristics as:</p> <ul style="list-style-type: none"> • Natural elements, processes and patterns • Biophysical, ecological, geological and geomorphological aspects • Natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs • The natural movement of water and sediment including hydrological and fluvial processes • The natural darkness of the night sky (in the coastal environment)

		<p>character values will be recognised and provided for. For example, clarity appears to be the only attribute associated to natural character, although clarity is linked to swimmability rather than natural character⁸. The protection of the natural character of the coastal environment, wetlands and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development is a matter of national importance under s.6 of the RMA.</p>	<ul style="list-style-type: none"> • Places or areas that are wild and scenic • A range of natural character from pristine to modified, and • Experiential attributes, and their content or setting. <p>The Director-General seeks to include objectives, policies and methods in the plan to appropriately recognise and provide for natural character values and the requirements under s.6(a) of the RMA.</p>
<p>3.11.1.2 Mana Tangata - Use Values</p>			
<p>Use values - Wai tapu Ko ngā wai tapu / Sacred waters</p>	<p>Support with amendment</p>	<p>The Director-General is generally supportive of the value to the extent that it reflects the national value stated in the NPSFM.</p> <p>The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.</p>	<p>The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.</p>
<p>Use values - Mahinga kai Ko ngā wāhi mahinga kai / Food gathering, places of food</p>	<p>Support with amendment</p>	<p>The Director-General is generally supportive of the value to the extent that it reflects the national value stated in the NPSFM.</p> <p>The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.</p>	<p>The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.</p>

⁸ Scarsbrook M 2016. Water Quality Attributes for Healthy Rivers: Wai Ora Plan Change. Draft for discussion. Report No. HR/TLG/2016-2017/2.1A. Pp. 40.

Use values - Human health for recreation Ko te hauora me te mauri o ngā tāngata / The health and mauri of the people	Support with amendment	The Director-General is generally supportive of the value to the extent that it reflects the compulsory national value stated in the NPSFM. The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.	The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.
Use values - Transport and tauranga waka He urungi / Navigation	Support with amendment	The Director-General is generally supportive of the value to the extent that it reflects the national value stated in the NPSFM. The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.	The Director-General seeks that the value be expanded to include lakes, wetlands and the coastal environment as well as rivers.

6. Freshwater Management Units

Provision	Support/ Opposition	Discussion	Relief sought
Freshwater Management Units			
Freshwater Management Units - accuracy of extent	Amendment sought	Freshwater Management Units are identified in the proposed plan change on Map 3.11-1 <i>Map of the Waikato and Waipā River Catchments, showing Freshwater Management Units</i> . At the scale used on this map, the Director-General is uncertain about the accuracy of mapping of Freshwater Management Units and their catchments, in particular with regard to lakes.	The Director-General seeks that the proposed plan change include maps of a smaller scale than map 3.11-1 to ensure that the extent of each freshwater management unit can be easily identified.
Freshwater Management Units -	New	The Director-General considers that the Whangamarino Wetland catchment should be identified as a separate Freshwater Management Unit.	The Director-General seeks that a separate FMU be identified for the Whangamarino Wetland in order to recognise the significant

Whangamarino Wetland		<p>The Director-General considers that a separate FMU is warranted to recognise the following:</p> <ul style="list-style-type: none"> • The Whangamarino Wetland is an outstanding waterbody, Ramsar site (wetland of international significance) and is the second largest wetland system in the North Island • Water quality issues that are adversely affecting Whangamarino (including sediment, phosphorus) are not adequately addressed in the proposed plan change as notified • Targets for nitrogen in river sub-catchments do not achieve the Vision and Strategy for the Waikato River and do not protect the significant values of the Whangamarino Wetland. • There is currently sufficient technical information to establish water quality targets for a specific Whangamarino Wetland FMU. 	<p>values of this wetland system and to enable appropriate water quality attribute targets to be set to recognise the following:</p> <ul style="list-style-type: none"> • The Whangamarino Wetland is an outstanding waterbody, Ramsar site (wetland of international significance) and is the second largest wetland system in the North Island • Water quality issues that are adversely affecting Whangamarino (including sediment, phosphorus) are not adequately addressed in the proposed plan change as notified • Targets for nitrogen in river sub-catchments do not achieve the Vision and Strategy for the Waikato River and do not protect the significant values of the Whangamarino Wetland. • There is currently sufficient technical information to establish water quality targets for a specific Whangamarino Wetland FMU. <p>The extent of the Whangamarino Wetland FMU is mapped in Appendix D and includes a number of sub-catchments within the current Lower Waikato FMU.</p>
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			Appendix E outlines the attributes of the Whangamarino FMU and Appendix F outlines the values associated with it.
Freshwater Management Units - Lakes	Amendment sought	<p>The Director-General considers that the grouping of lakes into the 4 proposed Lake FMUs fails to recognise the importance of key physical drivers in determining lake processes (e.g. lake sizes, depths, morphometry, lake:catchment area ratios, and catchment landuses). The Director-General considers that the current FMUs do not group lakes on the basis of these key drivers which will determine the achievable end states for the lakes as a result of these features.</p> <p>The current groupings may be insensitive to any water quality changes at individual lakes. In particular the Director-General is concerned that the significant management interventions that have been undertaken on public land around a number of lakes, including Lakes Rotomānuka, Rotopiko, Ruatuna, Areare, Kainui, Ngaroto, Kaituna, Komakarau, Waiwhakareke, Koromatua and Ngahewa have been overlooked, as well as the need for active catchment management initiatives for these lakes. For some of these lakes, catchment plans and farm plans have already been prepared for properties in the lake catchments and the Director-General would like to see these farm plans prioritised to recognise the investment already made to date.</p>	<p>The Director-General seeks that Freshwater Management Units be created for each individual lake and its catchment. Individual limits and targets are then required for each lake to ensure ecosystem health and the life-supporting capacity of the lake are accurately provided for.</p> <p>Separate lake FMUs are required to ensure that water quality monitoring of each lake accurately reflects the individual lake and is not an average of all lakes within a grouped lake FMU.</p> <p>The Director-General seeks that previous work on lake catchments be recognised and that farm plans that have already been completed be prioritised to recognise the investment that has already been made. Appendix J details the existing management planning the Department is aware of.</p>
Split sub-catchments	Amendment sought	The Director-General is concerned by the separation of some of the larger lake catchments into two sub catchments with	The Director-General seeks to provide a separate freshwater management unit for each

		<p>differing priorities. An example of this is Lake Waahi which is located in sub catchments 18 and 19 with priorities 1 & 2 respectively.</p> <p>This approach makes holistic management of a lake and its catchment difficult and further reinforces why individual Freshwater Management Units for lakes are necessary to ensure entire lake catchments are appropriately managed to achieve FMU limits.</p>	<p>individual lake and its catchment to ensure that lake catchments are appropriately represented, prioritised and managed.</p>
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7. Objectives

Provision	Support/ Opposition	Discussion	Relief sought
3.11.2 Objectives/Ngā Whānga			
Freshwater objectives	Amendment sought	It is not clear to the Director-General what the freshwater objectives are for the FMUs within the Waikato and Waipā River catchments. Freshwater objectives are key to understanding implementation of the proposed plan change and are required to achieve the NPSFM, the purpose of the RMA and should recognise and provide for the values in FMUs.	The Director-General seeks that the proposed plan change clearly identify freshwater objectives to recognise and provide for the intrinsic values in Freshwater Management Units.
Lack of assessment and analysis	Amendment sought	The RMA requires, under s.32, that the evaluation report must examine the extent to which the objectives of the proposal are the “most appropriate way to achieve the purpose of the Act”. In order to consider whether the objectives of proposed plan change 1 are the most appropriate way to achieve the purpose of the Act, the evaluation report should show what objectives were considered and why, over and above other options for objectives, the objectives decided upon are the most appropriate. This analysis is not evident from the s.32 report and the report merely states that the objectives “are an appropriate way of achieving the direction set out in section 5”.	<p>The Director-General seeks that the objectives of the proposed plan change not be progressed through the first schedule process until there has been analysis which identifies that the objectives are the most appropriate way to achieve the purpose of the Act.</p> <p>If the existing objectives are not identified as being the most appropriate way to achieve the purpose of the Act, they need to be replaced with objectives that are more appropriate, including, but not limited to the objectives sought by the Director-General in this submission.</p>

		<p>The overall analysis of the objectives focuses on the social, economic and cultural wellbeing and overlooks the requirements in s.5 to provide for well-being, while sustaining resources for the needs of future generations, safe-guarding the life supporting capacity of the resources and avoiding, remedying or mitigating adverse effects on the environment.</p> <p>The evaluation of the objectives therefore does not fulfil the requirements of s.32, nor does it achieve the purpose of the RMA stated at s.5.</p>	
Protection of ecosystem health and freshwater fish species	New	<p>The Director-General seeks greater recognition for the importance of fresh water to safeguard ecosystem health and the health of indigenous species.</p> <p>An objective of this nature will give effect to the NPSFM and the Vision and Strategy and will align with the requirements of s.6 and s.7 of the RMA in relation to the protection of areas of significant habitats of indigenous fauna and the protection of the habitat of trout.</p> <p>In addition, the Director-General considers it is appropriate to include a more specific objective which seeks to recognise and provide for the values of freshwater fish species identified in Appendix C.</p>	<p>The Director-General seeks inclusion of an objective which safeguards ecosystem health and the health of indigenous species.</p> <p>The Director-General also seeks an additional objective that recognises and provides for the values of freshwater fish species identified in Appendix C to this submission.</p>
Objective 1: Long-term restoration and protection of water quality for each sub-catchment and	Support with amendment	<p>While the overall direction of the objective is supported, the objective as currently worded places a focus on the discharge of contaminants. The focus and intention of the objective should be to focus on the restoration and protection of water quality. The Director-General seeks that the objective be reworded to place a positive focus on water</p>	<p>The Director-General seeks to retain the objective with amendments to focus on the restoration and protection of water quality rather than the discharge of contaminants to give effect to the Vision and Strategy.</p>

<p>Freshwater Management Unit/Te Whāinga 1: Te whakaoranga tauroa me te tiakanga tauroa o te kouniga wai ki ia riu kōawaawa me te Wae Whakahaere i te Wai Māori</p> <p>By 2096, discharges of nitrogen, phosphorus, sediment and microbial pathogens to land and water result in achievement of the restoration and protection of the 80-year water quality attribute^ targets^ in Table 3.11-1.</p> <p>And Principle reasons for adopting Objective 1</p>		<p>quality restoration and protection through the reduction of the discharge of contaminants, including diffuse sources of nutrients and from erosion.</p> <p>The Director-General is supportive of a long term, staged approach to improving water quality, however the water quality attribute targets for lakes set in Table 3.11-1 do not equate to the “long term restoration and protection of water quality” that is the intent of Objective 1.</p>	<p>The Director-General seeks water quality targets for lakes be raised to ensure that “long term restoration and protection of water quality” is achieved.</p>
<p>Objective 2: Social, economic and cultural wellbeing is maintained in the long term/Te Whāinga</p>	<p>Support with Amendment</p>	<p>In order to achieve the purpose of the RMA, the focus of this objective should be on the sustainable management of natural and physical resources to ensure that these resources are managed in a way, or at a rate, which enables people and</p>	<p>The Director-General seeks to retain the objective with amendments to recognise the benefits to the environment from the restoration and protection of water quality in the Waikato and Waipā River catchments.</p>

<p>2: Ka whakaūngia te oranga ā-pāpori, ā-ōhanga, ā-ahurea hoki i ngā tauroa</p> <p>Waikato and Waipā communities and their economy benefit from the restoration and protection of water quality in the Waikato River catchment, which enables the people and communities to continue to provide for their social, economic and cultural wellbeing</p> <p>and</p> <p>Principle reasons for adopting Objective 2</p>		<p>communities to provide for the social economic and cultural wellbeing.</p> <p>The Director-General disagrees that the only focus of Objective 2 be on the benefit to the economy to be achieved from the proposed plan change. The focus should also be on the benefits to the environment, which includes the people of the Waikato and Waipā communities.</p> <p>The use of the word 'continue' in this policy could be interpreted as continue at the current level. The reasons for adopting the objective acknowledge that there may need to be significant departure from how business and communities currently function. This is not signalled in the objective.</p> <p>The Director-General is not clear what 'social disruption' is being referred to as needing to be minimised in the reasons for adopting Objective 2. In order to achieve real improvements in water quality, the Director-General considers there are current discharge practices that will require better management or may need to cease and each contributing individual is responsible for making these changes including both diffuse and point source discharges.</p>	<p>Remove the word 'continue' from the objective.</p>
<p>Objective 3: Short-term improvements in water quality in the first stage of restoration and protection of water quality for each sub-catchment and</p>	<p>Support with amendment</p>	<p>Overall the Director-General supports the intent of Objective 3 as a first step in improving water quality.</p> <p>The Director-General is concerned however that there are no short-term targets established for lakes. This has been deferred as a separate exercise for lake and catchment planning and the establishment of 10-year water quality</p>	<p>The Director-General seeks to retain the objective with amendments that 10 year targets for water quality improvement be set for lakes using existing available expertise and models to prioritise those lakes to achieve a 20% improvement within 10 years.</p>

<p>Freshwater Management Unit/Te Whāinga</p> <p>3: Ngā whakapainga taupoto o te kounga wai i te wāhanga tuatahi o te whakaoranga me te tiakanga o te kounga wai i ia riu kōawāwa me te Wae Whakahaere Wai Māori</p> <p>Actions put in place and implemented by 2026 to reduce discharges of nitrogen, phosphorus, sediment and microbial pathogens, are sufficient to achieve ten percent of the required change between current water quality and the 80-year water quality attribute^targets^ in Table 3.11-1. A ten percent change towards the long term</p>		<p>attributes over the next 10 years. Lakes collect, store and recycle nutrients and as a result are particularly susceptible and sensitive to nutrient discharge. There has already been significant and substantial investment in many lakes through the co-ordinated action of private landowners and other stakeholders (including iwi, DOC, Waikato Regional Council, Fish & Game, and District Councils) using a range of funding sources. Examples include:</p> <ul style="list-style-type: none"> ▪ Lake Maratoto - restoration project led by WRC - substantial re-vegetation project and water level protection ▪ Lake Ngaroto - restoration project led by Waipā DC. NZ Landcare Trust (funded by Waikato River Authority) has developed a Community Catchment Action Plan, including individual farm/property plans (now finished) ▪ Lake Rotomānuka - restoration project led by DOC/Fonterra (as a living water site). NZ Landcare Trust (funded by Waikato River Authority) has had a farm/catchment planning project (now finished). Adjacent land areas previously purchased for retirement by Waipā District Council (NHF funding) ▪ Lake Ruatuna - restoration project led by DOC/Fonterra (as a living water site). Actions mostly on public land involving planting and retirement, and constructed wetlands/sediment traps ▪ Lake Areare - restoration project led by DOC/Fonterra (as a living water site). Actions mostly on public land only. Substantial funding from Waikato River Authority for revegetation 	<p>The Director-General seeks to include the discharge of contaminants from point source discharges in any allocation regime to ensure that the full extent of contaminant discharges affecting water quality are appropriately managed.</p>
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<p>water quality improvements is indicated by the short term water quality attribute^targets^ in Table 3.11-1.</p> <p>And</p> <p>Principle reasons for adopting Objective 3</p>	<ul style="list-style-type: none"> ▪ Lake Mangahia – revegetation project ▪ Lakes Kaituna & Komakarau – restoration project led by landowner with support from NZ Landcare Trust, WRC and DOC ▪ Rotopiko Lakes – restoration plan prepared, and a number of actions implemented by DOC, with support from WRC, Waipā DC and the NZ Wetland Trust. Actions have included Nutrient attenuation, fencing, planting, land retirement and pest fish management. ▪ Lake Ohinewai – restoration project. Science/research undertaken by Waikato University. Some practical on ground work undertaken by DOC ▪ Lake Puketū – DOC, WRC and WCEET funded recent fencing (1200m), planting (13000 plants), and weed control project ▪ Lake Rotoiti DOC, WRC, WCEET and landowner funded recent fencing (885m) and planting (7000 plants) and weed control • Lake Otamatearua- WRC/WRA & Landowner have undertaken a considerable fencing and planting project • Lake Waahi – considerable fencing and planting undertaken by WRC, Solid Energy and landowners around the lake margin. Waikato Tainui also undertook a substantial pest fish/wetland restoration programme at the lake. <p>The Director-General seeks to recognise and prioritise the work that has already been undertaken to improve water</p>	
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		<p>quality for lakes, and seeks a greater proportional improvement (e.g. 20%) in lake water quality over the initial 10-year period.</p> <p>The Director-General notes that no immediate changes are proposed to the management of point source discharges as a result of this proposed plan change. The Director-General considers that the discharge of contaminants from point source discharges needs to be included in any allocation regime to ensure that the full extent of contaminants affecting water quality are appropriately managed.</p>	
<p>Objective 4: People and community resilience/Te Whāinga 4: Te manawa piharau o te tangata me te hapori</p> <p>A staged approach to change enables people and communities to undertake adaptive management to continue to provide for their social, economic and cultural wellbeing in the short term while:</p>	Support with amendment	<p>As outlined with the wording of Objective 2, the Director-General disagrees with the use of the term 'continue' as it can be interpreted to mean continue at the current level. In order to achieve the restoration of water quality in the Waikato and Waipā Rivers, real changes in the management of discharges are necessary.</p> <p>The Director-General also considers that there is significant uncertainty created through the objective at b, where there is mention of the requirement for "further contaminant reductions" being required in future, but with no certainty around what these reductions will be or how they will be implemented.</p> <p>The Director-General is not clear from a, what 'uses' are being referred to and what consideration of values and uses would actually look like in practice. Clarification of this is</p>	<p>The Director-General seeks to retain the objective with amendments that achieve the following:</p> <ul style="list-style-type: none"> • Removal of the term 'continue' from the objective • Removal of the uncertainty around "further contaminant reductions" by implementing an allocation regime for contaminants based on current information and knowledge with the ability to amend this regime as further information becomes available • Amend subsection a to require that at least intrinsic values are recognised and provided for. Additional clarity is already required about what

<p>a. considering the values and uses when taking action to achieve the attribute^ targets^ for the Waikato and Waipā Rivers in Table 3.11-1; and</p> <p>b. recognising that further contaminant reductions will be required by subsequent regional plans and signalling anticipated future management approaches that will be needed to meet Objective 1.</p> <p>And</p> <p>Principle reasons for adopting Objective 4</p>		<p>needed. In addition, the Director-General considers that the objective needs to be amended to ensure that intrinsic values are recognised and provided for given that these are matters identified in sections 5 and 6 of the RMA.</p> <p>Overall, while the Director-General considers that a staged approach to change is appropriate, the proposed plan change as currently worded does not initiate enough initial change to ensure that real improvements to water quality are realised.</p>	<p>“consideration” of values and uses would be in practice</p> <ul style="list-style-type: none"> • Implement greater changes to discharge of contaminants in the short-term, through an allocation regime that recognises land type and achieves a greater short term improvement in water quality.
<p>Objective 5: Mana Tangata - protecting and restoring tangata whenua values/Te Whāinga 5: Te Mana Tangata - te tiaki me te whakaora i ngā</p>	<p>Support with amendments</p>	<p>Overall the Director-General supports the stated goals of the proposed plan change and Objective 5. However, as highlighted earlier in the submission, the Director-General has significant concerns with the proposed allocation regime which essentially ‘grandparents’ existing allocation.</p>	<p>The Director-General seeks to retain Objective 5 as notified which an amendment which clearly outlines that intrinsic values be recognised and provided as required by s.5 & 6 of the RMA and clarify that these are not considered ‘impediments’ under subsection b.</p>

<p>uara o te tangata whenua</p> <p>Tangata whenua values are integrated into the co-management of the rivers and other water bodies within the catchment such that:</p> <ul style="list-style-type: none"> a. tangata whenua have the ability to: <ul style="list-style-type: none"> i. manage their own lands and resources, by exercising mana whakahaere, for the benefit of their people; and ii. actively sustain a relationship with ancestral land and with the rivers and other water bodies in the catchment; and b. new impediments to the flexibility of the use of tangata whenua ancestral lands are minimised; and c. improvement in the rivers' water quality and 		<p>The Director-General also considers that the objective needs to be amended to ensure that intrinsic values are recognised and provided for given that these are matters identified in sections 5 and 6 of the RMA. These matters should not be considered as 'impediments' under subsection b.</p>	
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<p>the exercise of kaitiakitanga increase the spiritual and physical wellbeing of iwi and their tribal and cultural identity.</p> <p>And</p> <p>Principle reasons for adopting Objective 5</p>			
<p>Objective 6: Whangamarino Wetland/Te Whāinga 6: Ngā Repo o Whangamarino</p> <p>a. Nitrogen, phosphorus, sediment and microbial pathogen loads in the catchment of Whangamarino Wetland are reduced in the short term, to make progress towards the long term restoration of Whangamarino Wetland; and</p>	<p>Re-include with amendment</p>	<p>The Director-General seeks to reinstate an objective or objectives in relation to the Whangamarino Wetland recognising its value and significance as a whole wetland system, comprising marsh, swamp, fen and bog wetland types.</p> <p>The objective needs to ensure that the significant values of wetlands are maintained and enhanced. The protection of the significant values of wetlands is required by the NPSFM likewise there is a requirement that the overall quality of freshwater is maintained or improved while protecting these significant values. This plan must give effect to the NPS.</p> <p>While stock exclusion from wetlands will help to improve water quality, further steps are required. These are identified in the implementation methods section below.</p> <p>For the Whangamarino Wetland, the management of sediment and phosphorus load is a function of both the</p>	<p>The Director-General seeks to include within Chapter 3.11 an objective relating to both the Whangamarino Wetland, and the significant values of all wetlands, that achieves the following:</p> <ul style="list-style-type: none"> • recognises the value and significance of the Whangamarino as a whole wetland system, comprising marsh, swamp, fen and bog wetland types. • Gives effect to the NPSFM in recognising and protecting the significant values of wetlands and overall quality of freshwater is improved • Include methods to achieve the objective as outlined in the implementation methods section below

<p>b. The management of contaminant loads entering Whangamarino Wetland is consistent with the achievement of the water quality attribute targets in Table 3.11.1.</p> <p>And</p> <p>Principle reasons for adopting Objective 6</p>		<p>concentration of sediment/phosphorus and the quantity (volume) of water that is discharged. Unregulated systems (e.g. Whangamarino River) have no opportunity to manage volume and therefore, the setting of targets for water quality needs to appropriately reflect this by taking account of both natural and controlled flows.</p> <p>The Director-General seeks that an objective about the Whangamarino Wetland explicitly acknowledge the role that discharge volume and not just concentration of contaminants have in achieving water quality improvement in Whangamarino Wetland and in particular, discharges relating to the Lower Waikato Waipā Flood Control Scheme.</p>	<ul style="list-style-type: none"> Recognises the importance of managing both the concentration of contaminants and the quantity of water that is discharged into the Whangamarino Wetland by setting targets for water quality that take account of the both natural and controlled flows. <p>Alternatively, a separate objective which recognises the significant values of all wetlands could be appropriate.</p>
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8. Policies

Provision	Support/ Opposition	Discussion	Relief sought
3.11.3 Policies/ Ngā Kaupapa Here			
Inanga spawning - new	New	Inanga spawn in the lower Waikato River, amongst riparian vegetation at the upper tidal extent during high spring tides. Early records suggest that this occurs on the Waikato River downstream of Tuakau, although modelling of the MHWS ₉₀ , LiDAR data and any recent spawning records held by WRC would better predict the	The Director-General considers that additional policies and rule(s) are required to protect spawning habitat.

		<p>available spawning habitat for īnanga, similar to methods used by Canterbury Regional Council.</p> <p>The Director-General is aware that some work has already been completed for Lakes Waahi and Whangape and the lower Waikato River⁹.</p> <p>Policies and rules are needed to protect īnanga spawning sites.</p>	
<p>Policy 1: Manage diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens/Te Kaupapa Here 1: Te whakahaere i ngā rukenga roha o te hauota, o te pūtūtae-whetū, o te waiparapara me te tukumate ora poto</p> <p>Manage and require reductions in sub-catchment-wide discharges of nitrogen, phosphorus, sediment and microbial</p>	<p>Support with amendment</p>	<p>Overall, the Director-General considers that the direction that needs to be set in Policy 1 is that of a reduction in the discharge of contaminants. The use of the words “manage and require reductions” should be replaced with “reduce” in order to provide clearer direction to plan users of the desired outcomes.</p> <p>The Director-General is not clear how the plan intends to define “low level of contaminant discharge” or “moderate to high levels of contaminant discharge”. This needs to be clarified to provide greater certainty for plan users.</p>	<p>The Director-General seeks to retain the policy with amendments that achieve the following:</p> <ul style="list-style-type: none"> • Replace “manage and require reductions” with “reduce” • Provide clear definition of the terms low, moderate and high levels of contaminant discharge or replace these terms with other clearly defined terms.

⁹ <https://www.waikatoregion.govt.nz/services/publications/technical-reports/tr/tr201424>

<p>pathogens, by:</p> <p>a. Enabling activities with a low level of contaminant discharge to water bodies provided those discharges do not increase; and</p> <p>b. Requiring farming activities with moderate to high levels of contaminant discharge to water bodies to reduce their discharges; and</p> <p>c. Progressively excluding cattle, horses, deer and pigs from rivers, streams, drains, wetlands and lakes.</p>			
<p>Policy 2: Tailored approach to reducing diffuse discharges from farming activities/Te Kaupapa Here 2: He huarahi ka āta whakahāngaihia hei whakaiti i ngā</p>	<p>Support with amendment</p>	<p>Overall, the Director-General considers that the direction that needs to be set in Policy 2 is that of a reduction in the discharge of contaminants. The use of the words “manage and require reductions” should be replaced with “reduce” in order to provide clearer direction to plan users of the desired outcomes.</p>	<p>The Director-General seeks to retain the policy with amendments that provide clearer direction to landowners and plan users by removing “manage and require reductions in” and replacing it with “reduce”.</p>

<p>rukenga roha i ngā mahinga pāmu Manage and require reductions in sub-catchment-wide diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens from farming activities on properties and enterprises by:</p> <p>a. Taking a tailored, risk based approach to define mitigation actions on the land that will reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens, with the mitigation actions to be specified in a Farm Environment Plan either associated with a resource consent, or in specific requirements established by</p>		<p>Overall, the Director-General is supportive of the role of Farm Environment Plans in achieving reductions in the leaching of contaminants whilst maintaining on farm productivity.</p> <p>The Director-General opposes the use of 'certified industry scheme' concept until there is greater certainty and rigour around how this process will be managed. As it currently stands, the introduction of a process operating outside of the plan process, which excludes public participation, effectively outsources the Council's responsibility for ensuring that farms are operating in accordance with the plan without independent rigour and auditing in place.</p>	<p>The Director-General opposes the introduction of certified industry schemes in the manner proposed in the proposed plan change. The process excludes public from involvement in the process as it is something that is proposed to operate outside of the plan and without any independent rigour and auditing in place.</p>
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<p>participation in a Certified Industry Scheme; and b. Requiring the same level of rigour in developing, monitoring and auditing of mitigation actions on the land that is set out in a Farm Environment Plan, whether it is established with a resource consent or through Certified Industry Schemes; and c. Establishing a Nitrogen Reference Point for the property or enterprise; and d. Requiring the degree of reduction in diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens to be proportionate to the amount of current discharge (those discharging more are</p>			
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<p>expected to make greater reductions), and proportionate to the scale of water quality improvement required in the sub-catchment; and</p> <p>e. Requiring stock exclusion to be completed within 3 years following the dates by which a Farm Environment Plan must be provided to the Council, or in any case no later than 1 July 2026.</p>			
<p>Policy 3: Tailored approach to reducing diffuse discharges from commercial vegetable production systems/Te Kaupapa Here 3: He huarahi ka āta whakahāngaihia hei whakaiti i ngā rukenga roha i ngā</p>	<p>Support with amendment</p>	<p>Overall, the Director-General considers that the direction that needs to be set in Policy 3 is that of a reduction in the discharge of contaminants. The use of the words “manage and require reductions” should be replaced with “reduce” in order to provide clearer direction to plan users of the desired outcomes.</p> <p>Subsection a. - The Director-General seeks that greater certainty is provided in the Plan for landowners and plan users to understand what “reducing average contaminant discharges over time” looks like in practice.</p>	<p>The Director-General seeks to retain the policy with amendments that achieve the following:</p> <ul style="list-style-type: none"> • Remove “manage and require reductions” with “reduce” • Greater clarity is provided over what the Council intends by “reducing average contaminant discharges over time” as stated in subsection a.

<p>pūnaha arumoni hei whakatupu hua whenua Manage and require reductions in diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens from commercial vegetable production through a tailored, property or enterprise-specific approach where:</p> <ol style="list-style-type: none"> a. Flexibility is provided to undertake crop rotations on changing parcels of land for commercial vegetable production, while reducing average contaminant discharges over time; and b. The maximum area in production for a property or enterprise is established and 		<p>Again, the Director-General is concerned with the proposed allocation regime which is inefficient in its methods for allocating contaminant discharge. With a more suitable, land type based allocation regime, as sought by the Director-General, this policy would be more effective.</p>	<ul style="list-style-type: none"> • An efficient land type based allocation regime
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<p>capped utilising commercial vegetable production data from the 10 years up to 2016; and</p> <p>c. Establishing a Nitrogen Reference Point for each property or enterprise; and</p> <p>d. A 10% decrease in the diffuse discharge of nitrogen and a tailored reduction in the diffuse discharge of phosphorus, sediment and microbial pathogens is achieved across the sector through the implementation of Best or Good Management Practices; and</p> <p>e. Identified mitigation actions are set out and implemented within timeframes specified in either a Farm Environment</p>			
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<p>Plan and associated resource consent, or in specific requirements established by participation in a Certified Industry Scheme.</p> <p>f. Commercial vegetable production enterprises that reduce nitrogen, phosphorus, sediment and microbial pathogens are enabled; and</p> <p>g. The degree of reduction in diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens is proportionate to the amount of current discharge (those discharging more are expected to make greater reductions), and the scale of water quality improvement</p>			
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required in the sub-catchment.			
<p>Policy 4: Enabling activities with lower discharges to continue or to be established while signalling further change may be required in future/Te Kaupapa Here 4: Te tuku kia haere tonu, kia whakatūria rānei ngā tūmahi he iti iho ngā rukenga, me te tohu ake ākuanei pea me panoni anō hei ngā tau e heke mai ana</p> <p>Manage sub-catchment-wide diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens, and enable existing and new low discharging activities to continue provided that cumulatively the</p>	<p>Support with amendment</p>	<p>Overall, the Director-General considers that Policy 4 lacks certainty and direction. This includes the following:</p> <ul style="list-style-type: none"> • “low discharging activities” is not defined and it is not clear what types of activities or levels of contaminants are considered low by WRC. Clarification is required. • “cumulatively” in respect to the achievement of Objective 3 - It is not clear whether this is intended to mean the cumulative result of each individual contaminant in a waterbody, or the cumulative result of all contaminants together in a waterbody. Clarification is required for plan users. <p>Overall, the Director-General considers that the policy results in uncertainty from the use of undefined terms and from the indication that “in the future” mitigation actions may be required to reduce diffuse discharges however there is no detail on what this future time period is and whether it refers to a 10-year timeframe, the 80-year timeframe or another timeframe altogether.</p>	<p>The Director-General seeks that the policy be retained with amendments to provide greater certainty to plan users and land owners through:</p> <ul style="list-style-type: none"> • Providing a definition of low discharging activities • Providing clarity around the use of the term cumulatively • Provide greater specificity around the “future” mitigation that is intended • Provide greater certainty about the future timeframe that is being referred to in the Policy.

<p>achievement of Objective 3 is not compromised. Activities and uses currently defined as low dischargers may in the future need to take mitigation actions that will reduce diffuse discharges of nitrogen, phosphorus, sediment and microbial pathogens in order for Objective 1 to be met.</p>			
<p>Policy 5: Staged approach/Te Kaupapa Here 5: He huarahi wāwāhi Recognise that achieving the water quality attribute^ targets^ set out in Table 11-1 will need to be staged over 80 years, to minimise social disruption and allow for innovation and new practices to</p>	<p>Support with amendment</p>	<p>The Director-General agrees that a staged implementation approach is an appropriate method to achieving water quality improvements over an 80-year timeframe. However, the Director-General is concerned at the lack of implementation methods outlined to achieve these targets.</p> <p>While the proposed plan change seeks to achieve 10-year water quality attribute targets, and sets 80-year water quality attribute targets, there is no direction for how the 80 year targets will be achieved beyond the initial 10-year short term goals. There is also no certainty for landowners and plan users around the implementation methods in the interim 70-year period and the Director-General consider more guidance is required on this. The Director-General also considers that interim 20-year attribute targets should be set to ensure a future target beyond the initial 10-</p>	<p>The Director-General is supportive of a staged approach to achieving water quality improvements and seek to retain policy 5. However, the Director-General considers that greater clarity and certainty is required in the plan to demonstrate how these water quality targets will be achieved in both the short and long term.</p> <p>To achieve this, the policy should be amended to reduce the focus on social disruption and instead implement a land-based allocation regime that efficiently and effectively allocates the discharge of</p>

<p>develop, while making a start on reducing discharges of nitrogen, phosphorus, sediment and microbial pathogens, and preparing for further reductions that will be required in subsequent regional plans.</p>		<p>year period that continues to work toward the longer term 80-year targets.</p> <p>The Plan alludes to the requirement for “property-level allocation of contaminant discharge” but provides no detail on the method to be used to implement this, or how an appropriate methodology will be determined resulting in significant uncertainty for plan users and landowners about what lies ahead.</p> <p>The Director-General considers that the existing allocation regime needs to be replaced with a land-based allocation regime that efficiently and effectively allocates the discharge of contaminants to ensure ecosystem health and to ensure that the potential of natural resources are retained to meet the reasonably foreseeable needs of future generations.</p>	<p>contaminants to ensure ecosystem health and to ensure that the potential of natural resources are retained to meet the reasonably foreseeable needs of future generations.</p>
<p>Policy 6: Restricting land use change/Te Kaupapa Here 6: Te here i te panonitanga ā-whakamahinga whenua Except as provided for in Policy 16, land use change consent applications that demonstrate an increase in the diffuse discharge of nitrogen, phosphorus, sediment</p>	<p>Support with amendment</p>	<p>The Director-General considers that the policy could provide greater guidance to landowners and plan users around the required increases and reductions that will or will not be granted resource consent.</p>	<p>The Director-General considers that the policy is weak and needs to be strengthened to provide greater direction to decision makers when considering the non-complying activity for land use change at Rule 3.11.5.7. The Director-General is supportive of the non-complying activity rule where strengthened policy is employed.</p> <p>As an alternative to the above relief, the Director-General considers that a prohibited activity rule in place of 3.11.5.7. could be an appropriate</p>

<p>or microbial pathogens will generally not be granted. Land use change consent applications that demonstrate clear and enduring decreases in existing diffuse discharges of nitrogen, phosphorus, sediment or microbial pathogens will generally be granted.</p>			<p>mechanism to avoid the adverse effects of land use change on water quality.</p> <p>The changes to this policy sought above are required to ensure that activities which would cause the maximum catchment load to be exceeded are avoided (to give effect to Policy A NPSFM). This requires an efficient allocation regime to be in place to provide certainty to resource users and of environmental outcomes.</p>
<p>Policy 7: Preparing for allocation in the future/Te Kaupapa Here 7: Kia takatū ki ngā tohanga hei ngā tau e heke mai ana Prepare for further diffuse discharge reductions and any future property or enterprise-level allocation of diffuse discharges of nitrogen, phosphorus, sediment and microbial</p>	<p>Support with amendment</p>	<p>The focus of the policy is on future mechanisms for allocation. The Director-General considers that these mechanisms effectively leave decisions to future generations. This is inappropriate given the direction in section 5 of the RMA to achieve the sustainable management of natural and physical resources while “sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations”. Leaving decisions on an appropriate allocation regime for ‘later’ does not align with the purpose of the Act.</p> <p>The policy includes methodology within it which needs to be removed to ensure that the policy is clearer and less cluttered.</p> <p>There is no certainty for plan users or landowners what “flexibility of development of tangata whenua ancestral land” actually means in practice. Clarification is required here.</p>	<p>The Director-General seeks to retain the policy with amendments to achieve the following:</p> <ul style="list-style-type: none"> • That the criteria for identifying land suitability be used now to implement a land based allocation regime that achieves the purpose of the RMA by ensuring that the potential of natural and physical resources are sustained to meet the reasonably foreseeable needs of future generations. • Delete the text “To ensure this occurs, collect information and undertake research... should

<p>pathogens that will be required by subsequent regional plans, by implementing the policies and methods in this chapter. To ensure this occurs, collect information and undertake research to support this, including collecting information about current discharges, developing appropriate modelling tools to estimate contaminant discharges, and researching the spatial variability of land use and contaminant losses and the effect of contaminant discharges in different parts of the catchment that will assist in defining 'land suitability'.</p>		<p>Social disruption is repeated in this policy with the desire that this be minimised. It is not clear what this term is referring to, nor how it will be achieved while still achieving water quality attribute targets.</p> <p>New data and knowledge is referred to as being used for future allocations. The Director-General considers that this could be qualified through the use of the term "where appropriate" or a term to similar effect to ensure that new data and knowledge is used where the data is reliable and relevant to the particular allocation decision.</p>	<p>take advantage of new data and knowledge" as this is a method rather than part of the policy. The removed text should be included as a method in the later section of the proposed plan change.</p> <ul style="list-style-type: none"> • Amend b. to clarify what is meant by flexibility of development of tangata whenua ancestral land and how this part of the policy will be achieved. • Amend d. to include the term "where appropriate" or wording with similar effect to ensure that new data and knowledge is used where is it is relevant, reliable and accurate for the particular allocation being considered.
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<p>Any future allocation should consider the following principles:</p> <ul style="list-style-type: none"> a. Land suitability (5) which reflects the biophysical and climate properties, the risk of contaminant discharges from that land, and the sensitivity of the receiving water body, as a starting point (i.e. where the effect on the land and receiving waters will be the same, like land is treated the same for the purposes of allocation); and b. Allowance for flexibility of development of tangata whenua ancestral land; and c. Minimise social disruption and costs in the transition to the 'land suitability' approach; and 			
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<p>d. Future allocation decisions should take advantage of new data and knowledge.</p>			
<p>Policy 8: Prioritised implementation/Te Kaupapa Here 8: Te kaupapa o te whakatinanatanga Prioritise the management of land and water resources by implementing Policies 2, 3 and 9, and in accordance with the prioritisation of areas set out in Table 3.11-2. Priority areas include: a. Sub-catchments where there is a greater gap between the water quality targets[^] in Objective 1 (Table 3.11-1) and current water quality; and b. Lakes Freshwater Management Units[^]; and</p>	<p>Support with amendment</p>	<p>The Director-General supports a prioritised approach to implementation, with Lakes and Whangamarino Wetland being a high priority.</p> <p>Lakes occur in 21 of the 74 identified sub-catchments. While subsection b suggests that Lake FMUs are being given priority, Table 3.11-2 indicates the some of the best and most vulnerable lakes are being given the lowest priority. The Director-General considers it is counter-intuitive to prioritise the lakes in the order of the sub-catchments listed in Table 3.11-2 (Policy 8) because many of the lakes that are currently in the best condition, and are the most vulnerable to deterioration are in priority 3 sub-catchments (e.g. sub-catchments 34 (Waipā at SH23), 33 (Waipā at Narrows), Awaroa (Waiuku)).</p> <p>Section 8A of the Waikato RPS already identifies a list of high values freshwater bodies and wetlands that are in high condition but highly vulnerable to degradation including Lakes Maratoto, Rotopiko (North, South and East lakes), Otamatearoa and Ngahewa. The Director-General considers that it is important to prioritise lakes to reduce further contamination and to have greater aspirations for their quality in the future.</p> <p>The Director-General is generally supportive of prioritising the management of land and water resources. The Director-General is concerned however, about the methodology used to prioritise sub-</p>	<p>The Director-General seeks to retain the policy with amendments that see all wetland and lake sub-catchments be included as priority 1 in Table 3.11-2.</p> <p>Of particular concern are the lakes identified in Appendix H as having highest priority. The Director-General therefore seeks that lakes identified in Appendix H be actioned within 1-2 years of the plan change being made operative, with the management of the remainder of the lakes being actioned within 5 years from the date of the proposed plan change being made operative.</p> <p>This relief will recognise the significant work that has already been undertaken by the Department and other stakeholders (including members of the Waipā Peat Lakes Accord and the Waikato District Lakes and Wetlands MOA Group) with respect to ecological and water quality improvements and will ensure that those lake sub-catchments</p>

<p>e. Whangamarino Wetland.</p> <p>In addition to the priority sub-catchments listed in Table 3.11-2, the 75th percentile nitrogen leaching value dischargers will also be prioritised for Farm Environment Plans.</p>		<p>catchments. The approach taken in the proposed plan change is to prioritise sub-catchments based on current state and does not take into account the important values of sub-catchments or the sensitivity of individual waterbodies to the effects of poor water quality.</p> <p>The Director-General acknowledges that timeframes for water quality improvements to manifest are very long due to lakes having legacy loads that have built up over many years. The Director-General acknowledge that as a result of this, the time to rectify water quality issues is long. The Director-General therefore wishes to see all lake and wetland sub-catchments included as priority 1 to ensure 2096 targets are reached. In addition, it is important that 20-year targets are also implemented to ensure there is suitable direction beyond the short-term 10-year period initially proposed.</p> <p>Immediate land use changes are required in the catchments of lakes and wetlands as these systems are slower to respond to water quality changes.</p> <p>As identified earlier in the submission, there has already been significant work undertaken, particularly in relation to lakes which needs to be actioned and recognised as the highest priority through the plan change</p> <p>The current method of prioritisation for sub-catchments also overlooks the substantial investments that have already been undertaken in many of these lake catchments, which could be built upon to increase the rate of improvement for these lakes. Examples of this include:</p>	<p>that are currently in the best condition and most vulnerable to deterioration are given appropriate priority.</p>
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		<ul style="list-style-type: none"> • Farm environment plans have been prepared already for dairy farms in the catchments of Lakes Rotomānuka, Rotopiko/Serpentine Lakes, Lake Ngaroto, Lake Tunawhakaheke/aka Lake E, and Lake Mangakaware (funded by WRC, DOC, Waipā DC, Landcare Trust, Waikato River Authority). The Director-General considers it would be prudent to capitalise on these investments now and build on the implementation of existing plans rather than to start a new process in several years time. • Substantial investments in restoration planning for several lakes - e.g. Lakes Ruatuna, Areare (DOC-Fonterra Living Water), Rotomanuka (WRA, NZLCT), Ngaroto (Waipā DC with funding from WRA, MFE), Maratoto (WRC, WCEET, BCF), Waahi (WRA). <p>The Council have undertaken an assessment of in lake restoration potential in their 2011 SNA Lakes assessment publication (https://www.waikatoregion.govt.nz/services/publications/technical-reports/tr/tr201105), and have already initiated substantial restoration projects (in conjunction with others). These projects and the prioritisation and vulnerability scores in the SNA report should be taken into account when prioritising the lakes for implementation of proposed plan change 1.</p> <p>Appendix H of this submission provides a summary of lakes of high priority given their existing water quality, their vulnerability, potential for restoration and the existing information/data that already exists.</p>	
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		The Director-General notes that 24 of the 59 lakes subject to proposed plan change 1 are within the public conservation estate and administered by the Department on behalf of New Zealand public. This makes land and water in public conservation estate one of the most significantly affected by the proposed plan change.	
<p>Policy 9: Sub-catchment (including edge of field) mitigation planning, co-ordination and funding/Te Kaupapa Here</p> <p>9: Te whakarite mahi whakangāwari, mahi ngātahi me te pūtea mō te riu kōawāwa (tae atu ki ngā taitapa) Take a prioritised and integrated approach to sub-catchment water quality management by undertaking sub-catchment planning, and use this planning to support actions including edge of field mitigation</p>	Support with amendment	<p>The Director-General is not clear what form of “support” the policy is referring to for measures that efficiently and effectively contribute to water quality improvements. This statement is effectively a method for achieving the policy and objective.</p> <p>Subsection a. describes early engagement with certain parties in line with sub-catchment priority areas. It is not clear to the Director-General what this engagement will involve, what “early” actually means and what certainty this provides to landowners and plan users. While the Director-General encourages prompt and efficient engagement with the community, greater certainty about what this will result in practically is needed.</p> <p>Subsection c. refers to encouraging “cost-effective mitigations” where they have the biggest effect on improving water quality. The Director-General is not clear whether this section of the policy is placing emphasis on mitigation measures being cost effective or on achieving the greatest improvement in water quality as we acknowledge that these factors may not be resultant features of mitigation measures. The Director-General considers mitigation measures with the greatest environmental outcomes are better than the cheapest options.</p>	<p>The Director-General seeks to retain the policy with clarifications/amendments to achieve the following:</p> <ul style="list-style-type: none"> • Clarification around the method(s) of support that the policy intends to provide for efficient and effective water quality improvements. • Removal of the wording “Support measures that efficiently and effectively contribute to water quality improvements” as this is the method rather than a policy. • Greater clarification is needed on what form engagement will take and a timeframe for when this can be expected to occur for each priority area category. • Replace “mitigations” with “mitigation measures” to more appropriately reflect the terminology used in the Resource Management Act.

<p>measures. Support measures that efficiently and effectively contribute to water quality improvements. This approach includes:</p> <p>a. Engaging early with tangata whenua and with landowners, communities and potential funding partners in sub-catchments in line with the priority areas listed in Table 3.11-2; and</p> <p>b. Assessing the reasons for current water quality and sources of contaminant discharge, at various scales in a sub-catchment; and</p> <p>c. Encouraging cost-effective mitigations where they have the biggest effect on</p>		<p>The Director-General is not clear about the methodology that will be used in subsection d to apportion diffuse discharge reductions and further clarification is required to ensure the plan provides certainty for landowners and plan users.</p>	<ul style="list-style-type: none"> • Ensure subsection c be amended to ensure that those mitigation measures with the greatest environmental outcomes are prioritised and acknowledging that this could require high cost options to achieve desired outcomes. • Replace “a mitigation” in subsection d with “mitigation measure(s)” to more appropriately reflect the terminology used in the Resource Management Act. • Greater certainty is required around how subsection d will be achieved and the methodology the Council intends to apportion diffuse discharge reductions to each farming enterprise.
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<p>improving water quality; and d. Allowing, where multiple farming enterprises contribute to a mitigation, for the resultant reduction in diffuse discharges to be apportioned to each enterprise in accordance with their respective contribution to the mitigation and their respective responsibility for the ongoing management of the mitigation.</p>			
<p>Policy 10: Provide for point source discharges of regional significance/Te Kaupapa Here 10: Te whakataui i ngā rukenga i ngā pū tuwha e noho tāpua ana ki te rohe When deciding resource consent applications for point</p>	<p>Support with amendments</p>	<p>The Director-General considers that Policy 10 as written does not recognise the significant values of the receiving waterbodies. The Director-General seeks that the policy be amended to ensure that point source discharges are undertaken in a manner that recognises and provides for the values of individual water bodies. To do this, the specific values of waterbodies need to be identified as a requirement of Policy CA2(b) of the NPSFM and is critical to implementing appropriate freshwater objectives for waterbodies.</p> <p>Point source discharges should be considered as part of any land-based allocation regime which the Director-General has sought be immediately implemented. In the absence of this, the Director-</p>	<p>Point source discharges should be considered as part of any land-based allocation regime which the Director-General has sought be immediately implemented. In the absence of this, the Director-General considers that the achievement of water quality goals needs to be considered when considering all resource consent applications for point source discharges.</p>

<p>source discharges of nitrogen, phosphorus, sediment and microbial pathogens to water or onto or into land, provide for the:</p> <p>a. Continued operation of regionally significant infrastructure; and</p> <p>b. Continued operation of regionally significant industry.</p>		<p>General consider that the achievement of water quality goals needs to be considered when considering resource consent applications for point source discharges.</p> <p>The Director-General seeks further clarification over the term “regionally significant industry” as no clarity is provided about what this term means and therefore the implications of this are unclear.</p>	<p>The Director-General seeks that “regionally significant industry” be defined for the purpose of the proposed plan change so it is clear what is intended to be captured by this term.</p>
<p>Policy 11: Application of Best Practicable Option and mitigation or offset of effects to point source discharges/Te Kaupapa Here 11: Te whakahāngai i te Kōwhiringa ka Tino Taea me ngā mahi whakangāwari pānga; te karo rānei i ngā pānga ki ngā rukenga i ngā pū tuwha</p>	<p>Support with amendment</p>	<p>Avoidance and mitigation of adverse effects of point source discharges should be prioritised and off-setting only be considered in the event that adverse effects cannot be appropriately avoided and then mitigated as far as reasonably practicable.</p> <p>The Director-General considers that there is inadequate definition of appropriate guidance for off-sets. The ability to offset (rather than avoid or mitigate) must depend on the values of the water bodies in question, as some systems are irreplaceable and may not be suitable for offsetting.</p> <p>The Director-General provides substantial guidance on the suitability of biodiversity offsetting and steps for good practice which is available here http://www.doc.govt.nz/about-us/our-policies-and-plans/guidance-on-biodiversity-offsetting/</p>	<p>The Director-General seeks to retain the policy with amendments to ensure that avoidance and then mitigation of adverse effects from point source discharges are achieved as far as reasonably practicable before offsetting is considered.</p> <p>The Director-General also seeks amendment to Policy 11 to ensure that the significant values of water bodies are recognised and provided for when determining the suitability of offsetting to acknowledge instances where adverse effects on values cannot be offset.</p>

<p>Require any person undertaking a point source discharge of nitrogen, phosphorus, sediment or microbial pathogens to water or onto or into land in the Waikato and Waipā River catchments to adopt the Best Practicable Option* to avoid or mitigate the adverse effects of the discharge, at the time a resource consent application is decided. Where it is not practicable to avoid or mitigate all adverse effects, an offset measure may be proposed in an alternative location or locations to the point source discharge, for the purpose of ensuring positive effects on the environment to lessen</p>			
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<p>any residual adverse effects of the discharge(s) that will or may result from allowing the activity provided that the:</p> <ul style="list-style-type: none"> a. Primary discharge does not result in any significant toxic adverse effect at the point source discharge location; and b. Offset measure is for the same contaminant; and c. Offset measure occurs preferably within the same sub-catchment in which the primary discharge occurs and if this is not practicable, then within the same Freshwater Management Unit^ or a Freshwater Management Unit^ located upstream, and 			
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<p>d. Offset measure remains in place for the duration of the consent and is secured by consent condition.</p>			
<p>Policy 12: Additional considerations for point source discharges in relation to water quality targets/Te Kaupapa Here 12: He take anō hei whakaaro ake mō ngā rukenga i ngā pū tuwha e pā ana ki ngā whāinga ā-kounga wai Consider the contribution made by a point source discharge to the nitrogen, phosphorus, sediment and microbial pathogen catchment loads and the impact of that contribution on the likely achievement of the short term targets^ in Objective</p>	<p>Support</p>	<p>While the Director-General seeks throughout the submission that a more appropriate allocation regime be implemented through the proposed plan change, in the absence of this, Policy 12 provides useful guidance on matters to consider in relation to point source discharges.</p>	<p>In the absence of an appropriate allocation regime, the Department is supportive of the guidance provided by Policy 12 but still maintains that a more appropriate and efficient land-based allocation regime be implemented through the proposed plan change.</p>

<p>3 or the progression towards the 80-year targets^ in Objective 1, taking into account:</p> <ul style="list-style-type: none"> a. The relative proportion of nitrogen, phosphorus, sediment or microbial pathogens that the particular point source discharge contributes to the catchment load; and b. Past technology upgrades undertaken to model, monitor and reduce the discharge of nitrogen, phosphorus, sediment or microbial pathogens within the previous consent term; and c. The ability to stage future mitigation actions to allow investment costs to be spread over time and meet the water 			
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<p>quality targets^ specified above; and d. The diminishing return on investment in treatment plant upgrades in respect of any resultant reduction in nitrogen, phosphorus, sediment or microbial pathogens when treatment plant processes are already achieving a high level of contaminant reduction through the application of the Best Practicable Option*.</p>			
<p>Policy 13: Point sources consent duration/Te Kaupapa Here 13: Te roa o te tukanga tonu whakaaetanga mō te pū tuwha When determining an appropriate duration for any consent granted consider the following matters:</p>	<p>Support with amendment</p>	<p>While the Director-General is generally supportive of the intent of Policy 13 it seeks amendment that would ensure that consent terms are linked to the rest of the catchment through the use of a common catchment expiry date. This is useful to ensure that the targets for a particular catchment can be reviewed considering all contaminant discharges.</p>	<p>The Director-General seeks to retain policy 13 with amendments that include a common catchment expiry date for consent terms rather than a blanket 25 year consent term.</p>

<p>a. A consent term exceeding 25 years, where the applicant demonstrates the approaches set out in Policies 11 and 12 will be met; and</p> <p>b. The magnitude and significance of the investment made or proposed to be made in contaminant reduction measures and any resultant improvements in the receiving water quality; and</p> <p>c. The need to provide appropriate certainty of investment where contaminant reduction measures are proposed (including investment in treatment plant upgrades or land based application technology).</p>			
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<p>Policy 14: Lakes Freshwater Management Units/Te Kaupapa Here 14: Ngā Wae Whakahaere Wai Māori i ngā Roto</p> <p>Restore and protect lakes by 2096 through the implementation of a tailored lake-by-lake approach, guided by Lake Catchment Plans prepared over the next 10 years, which will include collecting and using data and information to support the management of activities in the lakes</p>	<p>Amendments sought</p>	<p>It is well accepted that most of the shallow lakes in the Waikato are in poor or very poor condition¹⁰, and that they have been in this condition for the last 15-20 years. Further delaying action on these systems does not give effect to the Vision and Strategy or the requirements of the RMA.</p> <p>Macrophytes are considered critical to the ecology and water quality of shallow lakes. Most Waikato lakes originally supported submerged macrophytes but have become turbid and nutrient enriched to the point where they have “flipped” (i.e. submerged plant collapse) and have become turbid and algal dominated. Once plants have collapsed the re-establishment of submerged plants becomes difficult due to poor light penetration and ongoing sediment disturbance. It is therefore a most effective to protect and maintain those lakes that continue to sustain submerged aquatic plants as a matter of priority.</p> <p>The Director-General considers that there is unacceptable risk in leaving lake restoration for a minimum of 10 years, particularly for vulnerable lakes that currently support reasonable (or better) water</p>	<p>The Director-General seeks that the restoration of lakes be implemented using existing data and information from work already completed to avoid further delay in improving lake water quality.</p> <p>Without immediate action, there is the possibility of the water quality of some lakes declining to a point where life-supporting capacity is compromised.</p>
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¹⁰ Edwards et al. (2010) summarised available information for 52 Waikato lakes including 39 lakes that had been surveyed between 2004-2010. In 2010 within the Waikato/Waipā catchment ONLY; 1 lake (Serpentine/Rotopiko North) had pristine/excellent native submerged plant communities; 2 lakes (Rotoroa and Serpentine/Rotopiko East) had native submerged plants in high condition; 5 lakes (Otamateroa, Ngahewa, Parkinson, Rotoiti and Puketi) had native submerged plants in moderate condition; All other lakes were devegetated. Between 2008-2010 plant abundance at Lakes Serpentine/Rotopiko South, Mangakaware and Kainui had declined below the threshold for generating a lake SPI score. Lake Serpentine/Rotopiko South had previously had a high score of 87% for native plants, which demonstrates how vulnerable (and rapidly) these lakes are to changes in water quality and ecological deterioration. Edwards et al (2010) suggest that these recently devegetated lakes may be sensitive to management/restoration at the threshold of devegetation. Ref Edwards, T. de Winton, M., Clayton, J. 2010. Assessment of the ecological condition of lakes in the Waikato region using Lake SPI. Environment Waikato Technical Report 2010/24. Hamilton.

Freshwater Management Units^.		quality and/or retain submerged aquatic plants, or where plants have recently been lost and/or there have been signs of regeneration in recent times (i.e. viable seed banks).	
<p>Policy 15: Whangamarino Wetland/Te Kaupapa Here 15: Ngā Repō o Whangamarino Protect and make progress towards restoration of Whangamarino Wetland by reducing the discharge of nitrogen, phosphorus, sediment and microbial pathogens in the sub-catchments that flow into the wetland to:</p> <ul style="list-style-type: none"> a. Reduce and minimise further loss of the bog ecosystem; and b. Provide increasing availability of mahinga kai; and c. Support implementation of any catchment plan 	Reinstate with amendment	The Director-General seeks to re-include a policy specific to the Whangamarino Wetland with amendments as outlined above in Section 4 of the submission.	The Director-General seeks the re-include a policy specific to the Whangamarino Wetland with amendments as outlined above in Section 4 of the submission.

<p>prepared in future by Waikato Regional Council that covers Whangamarino Wetland.</p>			
<p>Policy 16: Flexibility for development of land returned under Te Tiriti o Waitangi settlements and multiple owned Māori land/Te Kaupapa Here 16: Te hangore o te tukanga mō te whakawhanaketanga o ngā whenua e whakahokia ai i raro i ngā whakataunga kokoraho o Te Tiriti o Waitangi me ngā whenua Māori kei raro i te mana whakahaere o te takitini For the purposes of considering land use change applications under Rule 3.11.5.7, land use change that enables the</p>	<p>Support with amendment</p>	<p>The Director-General is supportive of the Policy to the extent that it recognises and provides for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga as is required under s.6 of the RMA.</p> <p>Flexibility in land development is also supported however the Director-General considers that this would be more appropriate when used in conjunction with a land based allocation regime.</p>	<p>The Director-General is supportive of the intent of Policy 16 and seek that it be retained. The Director-General considers however that the flexibility approach outlined in the policy is more appropriate when implemented with a land based allocation regime.</p> <p>The land based allocation regime is detailed in Paragraphs 11-17 above and should include:</p> <ol style="list-style-type: none"> a. The plan should state the maximum catchment load of contaminants (to provide certainty to resource users and of environmental outcomes); and b. The plan should allocate the maximum catchment load among land uses in the most efficient way, which the Director-General considers to be using a Land Use Capability (LUC) based approach whereby land type including slope,

<p>development of tangata whenua ancestral lands shall be managed in a way that recognises and provides for:</p> <ul style="list-style-type: none"> a. The relationship of tangata whenua with their ancestral lands; and b. The exercise of kaitiakitanga; and c. The creation of positive economic, social and cultural benefits for tangata whenua now and into the future; <p>Taking into account:</p> <ul style="list-style-type: none"> i. Best management practice actions for nitrogen, phosphorus, sediment and microbial pathogens for the proposed new type of land use; and ii. The suitability of the land for development into the proposed new type of land use, 			<p>soil type, drainage and geology are the key determinants; and</p> <ul style="list-style-type: none"> c. The plan should ensure that activities which would cause the maximum catchment load to be exceeded are avoided (to give effect to the direction in Policy A NPSFM to avoid over allocation); and d. In catchments that are already over allocated, the plan should put in place methods to phase out over allocation over time (to give effect to Policy A NPSFM).
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<p>reflecting the principles for future allocation as contained in Policy 7, including the risk of contaminant discharge from that land and the sensitivity of the receiving water body; and iii. The short term targets^ to be achieved in Objective 3.</p>			
<p>Policy 17: Considering the wider context of the Vision and Strategy/Te Kaupapa Here 17: Te whakaaro ake ki te horopaki whānui o Te Ture Whaimana When applying policies and methods in Chapter 3.11, seek opportunities to advance those matters in the Vision and Strategy and the values^ for the</p>	<p>Amendments sought</p>	<p>The Director-General considers that in order to achieve the Vision and Strategy for a “healthy Waikato River” and the purpose of the Resource Management Act, the consideration of the life-supporting capacity of freshwater, human health for recreation and ecosystem health are all values that need to be achieved as a priority through the proposed plan change rather than as a “secondary benefit” as currently worded in Policy 17.</p> <p>This is also required to ensure that the proposed plan change gives effect to the NPSFM and in achieving the purpose of the RMA.</p> <p>The RMA identifies the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers as a matter of national importance and should not be considered as a “secondary benefit” to the outcomes of Chapter 3.11.</p>	<p>Ultimately the purpose of this proposed plan change is to implement the Vision and Strategy for the Waikato and Waipā Rivers in the context of the Resource Management Act and the NPSFM.</p> <p>To imply, through Policy 17, that opportunities to enhance environmental, access and recreational values associated with rivers are “secondary benefits” resulting from the proposed plan change goes against the purpose of the RMA, the direction set through the NPSFM and the Vision and Strategy.</p>

<p>Waikato and Waipā Rivers that fall outside the scope of Chapter 3.11, but could be considered secondary benefits of methods carried out under this Chapter, including, but not limited to:</p> <p>a. Opportunities to enhance biodiversity, wetland values[^] and the functioning of ecosystems; and</p> <p>b. Opportunities to enhance access and recreational values[^] associated with the rivers.</p>		<p>The RMA also identifies, as a matter of national importance, the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna as well as the protection of the natural character of the coastal environment, wetlands and lakes and rivers and their margins. Again, these are matters that the Director-General should have as a priority rather than being achieved as a “secondary benefit”.</p> <p>In s.7 of the RMA, the intrinsic values of ecosystems, any finite characteristics of natural and physical resources and the protection of the habitat of trout and salmon are identified as matters that particular regard must be given to. Again, Policy 17 should be placing more importance on these factors than achieving them as “secondary benefits”.</p>	<p>The Director-General seeks that the policy be amended to reflect the clear direction provided in higher level documents including the RMA, NPSFM and the Vision and Strategy for the Waikato and Waipā Rivers.</p> <p>The Director-General seeks that all reference to “secondary benefit” is removed.</p>
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9. Implementation methods

Provision	Support/ Opposition	Discussion	Relief sought
3.11.4 Implementation methods/ Ngā tikanga whakatinana			
Key information gaps	New	The Director-General seeks to ensure that key information gaps be filled for those lakes with little or no recent water quality data	The Director-General seeks a new implementation method which prioritises the capture of key information to inform the management of lakes with little or no recent water quality data e.g. Te Otamanui Lagoon, Lake Rotongaroiti, Lake Rotongaro, Lake Rotokaraka, Lake Hotoananga, Lake Pikopiko, Lake Komakorau, Lake Rotokaeo, Lake Opuatia.
Nutrient and sediment attenuation tools	New	The Director-General require that further research is undertaken on nutrient and sediment attenuation tools for use in lake catchments.	The Director-General seeks to include a new implementation method which prioritises further research on nutrient and sediment attenuation tools for use in lake catchments.
3.11.4.1 Working with others/Te mahi tahi me ētehi atu	Support	The Director-General is supportive of the council's position to work with stakeholders on the implementation of Chapter 3.11.	The Director-General supports policy 3.11.4.1 and seek that it be retained as notified.
3.11.4.2 Certified Industry Scheme/Te kaupapa ā-ahumahi kua whai tohu	Oppose	The Director-General opposes the use of 'certified industry scheme' concept until there is greater certainty and rigour around how this process will be managed. As it currently stands, the introduction of a process operating outside of the plan process, which excludes public participation, effectively outsources the Council's responsibility for ensuring that farms are operating in	The Director-General opposes the introduction of certified industry schemes in the manner proposed in the proposed plan change. The process excludes public from involvement in the process as it is something that is proposed to operate outside of the plan and without any independent rigour and auditing in place.

		accordance with the plan without independent rigour and auditing in place.	
3.11.4.3 Farm Environment Plans/Ngā Mahere Taiao ā-Pāmu	Support with amendments	In order for farm environment plans to be effective, they need to have a clear goal in place to ensure success of the plan is measurable. The Director-General considers that the goal of a farm environment plan could be more clearly stated through the implementation method and through Schedule 1.	The Director-General seeks to retain the requirements of 3.11.4.3 with greater emphasis being placed on the overall goal for farm environment plans.
3.11.4.4 Lakes and Whangamarino Wetland /Ngā Roto me ngā Repu o Whangamarino	Support with amendments	The Director-General feels that this implementation method does not recognise existing lake management plans and existing strategies that have been developed. Implementation of the actions from these existing documents (for lakes where they exist) rather than further planning is what the Director-General considers need to be prioritised at this time. The Director-General acknowledges that information collection and planning is urgently required for lakes where this has not already occurred. An assessment of lake restoration option to improve water quality of the peat lakes indicated that options are limited until catchment inputs are significantly reduced ¹¹ . The method refers to “building on the Shallow Lakes Management Plan” (SLMP). Objective 1 in the SLMP (in	The Director-General seeks that the implementation method be retained with amendments to implement and action existing lake management plans and strategies as a priority. In addition to the proposed catchment management plan for the Whangamarino Wetland, the Director-General seeks greater certainty regarding the management of shallow lakes and seeks that objectives, targets and limits for the future management and enhancement of shallow lakes be specified through the proposed plan change. The Director-General seeks that existing farm plans be enforced and the expansion

¹¹ Faithfull et al. 2005. Waikato Peat Lakes Sediment Nutrient Removal Scoping Exercise - <https://www.waikatoregion.govt.nz/services/publications/technical-reports/tr/tr200615>

		<p>section 8) refers to “setting appropriate objective, targets and limits for the future management and enhancement of shallow lakes” in the proposed plan change process. The Director-General is concerned with the lack of direction provided through the proposed plan change and seeks that greater certainty be provided for the management of shallow lakes.</p> <p>Community catchment action plans exist already for Lakes Rotomānuka and Ngaroto (prepared by Landcare Trust with funding from MFE and WRA). The Director-General considers that implementation and further development of these plans and farm plans (where they already exist) is required as a matter of priority. This needs to include the retirement of wetland areas, increasing setbacks from waterways (including ephemeral waterways), and construction of sediment traps in key locations (already identified for some lakes). Appendix J to this submission provides a summary table of lakes in the Waikato Region and the level of planning that is currently in place.</p> <p>Vision development has already been completed to a large extent for the lakes in the Waipā and Waikato District under the 2 interagency agreements:</p> <ul style="list-style-type: none"> ▪ Waikato District Lakes and Wetlands Memorandum of Agreement - signed in 2011 by WRC, DOC, Waikato District Council, Auckland Waikato Fish & Game, and Waikato-Tainui 	<p>of work on private properties, beyond works already undertaken on Council and public conservation estate reserves, be undertaken as a matter of priority. This should include the following:</p> <ul style="list-style-type: none"> • retirement of wetland areas • increasing setbacks from waterways (including ephemeral waterways) • design and construction of sediment traps in key locations (already identified). <p>The Director-General also considers that where an evidence based description of the problem already exists the focus needs to be on using this information in implementing lake catchment plans.</p> <p>The Director-General is supportive of subsections d, e, f and g to the extent that they support integrated catchment management and seek that these be retained as notified.</p>
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		<ul style="list-style-type: none"> ▪ Waipā Peat Lakes Accord - signed in 2002 by WRC, DOC, Waipā District Council, AWFGC, and Nga Iwi Toopu o Waipā. <p>There is already information is available for some lakes that have been studied in depth to provide an evidence based description of the problem (i.e. where detailed studies and modelling projects have been undertaken (e.g. Lake Ngaroto, Rotomānuka, Waahi, Waikare, Serpentine/Rotopiko lakes, Ohinewai).</p> <p>The Director-General is supportive of subsections d, e, f and g to the extent that they support integrated catchment management.</p>	
Lakes - new	New	<p>A significant amount of collaboration has already occurred at a number of priority sites between many parties¹² to advance lakes restoration projects (including fencing, planting, nutrient reduction, retirement, outright land purchase, public access, funding farm plans for adjacent landowners, collaborative planning etc.)</p> <p>In some instances, (e.g. Serpentine/Rotopiko lakes, Rotomānuka, Mangakaware, Ngahewa), much of the work that can be done has already been done on public</p>	The Director-General also considers that regulatory methods are needed for private land in those catchments where appropriate works on public land adjoining lakes has already been completed e.g. Lakes Serpentine/Rotopiko lakes, Rotomānuka, Mangakaware and Ngahewa including This a regulatory framework around fencing of waterbodies and the planting of vegetative

¹² Waipa Peat Lakes Accord - Waipa DC, Waikato RC, DOC, Fish and Game, Nga Iwi Toopu o Waipa (Iwi)Waikato Waikato District Lakes & Wetlands Memorandum of Agreement - Waikato DC, Waikato RC, DOC, Fish & Game, Waikato - Tainui (Iwi). These agreements have existed for 15 years (Waipa) and 6 years (Waikato Lakes MOA) and have involved prioritisation processes and the establishment of co-ordinated and collaborative projects for the lakes.

		land adjoining the lakes, and the Director-General consider that regulatory methods are needed to influence the management of the wider catchment. This includes a regulatory framework around fencing of waterbodies and the planting of vegetative buffers together with the compulsory implementation of farm management plans.	buffers together with the compulsory implementation of farm management plans.
Lakes - new	New	<p>The Director-General is aware of significant work that has been undertaken to identify best practice guidelines for peat lakes. These includes:</p> <ul style="list-style-type: none"> • Waipā Peat Lakes booklet - a summary of the issues for peat lakes associated with drainage and cultivation¹³ • For Peat's Sake - Guidelines for landowners in peat catchments¹⁴ • Landcare Trust - Best Management practice that summarises the progress made at some peat lake sites¹⁵ <p>Collectively these documents reference best practices, but the Director-General considers that they are not accurately reflected in the proposed plan change, particularly in respect of:</p>	<p>The Director-General seeks that new implementation method or methods be introduced into the proposed plan change to actively reflect current best practice in relation to the protection of peat lakes. The Director-General considers this should include, at a minimum the method or methods with a focus on:</p> <ul style="list-style-type: none"> • Maintaining ground water levels over the summer periods • Creating good buffer zones • Reducing cultivation on peat soils or establishing large setbacks from cultivation to reduce the effects of peat shrinkage on the lake ecosystem.

¹³ <https://www.waikatoregion.govt.nz/assets/PageFiles/11188/Waipā%20District%20Peat%20Lakes%20and%20wetlands.pdf>

¹⁴ Part 1: <https://www.waikatoregion.govt.nz/assets/PageFiles/3205/peatssakebookletpart1.pdf>

Part 2: <https://www.waikatoregion.govt.nz/assets/PageFiles/3205/peatssakebookletpart2.pdf>

¹⁵ <http://www.landcare.org.nz/files/file/184/bmp-water-quality-waikato.pdf>

		<ul style="list-style-type: none"> • Maintaining ground water levels over the summer periods • Creating good buffer zones • Reducing cultivation or establishing large setbacks from cultivation to reduce the effects of peat shrinkage on the lake ecosystem. 	
Whangamarino wetland	Re-include 3.11.4.4 and amend	<p>In relation to subsection g. the Director-General seeks to have specific targets, both long term and short term for the Whangamarino Wetland. These targets are included as Appendix E and F to this submission. To achieve sediment and phosphorus reduction in the Whangamarino Wetland, the implementation method must include:</p> <ul style="list-style-type: none"> • Investment in catchment wide programmes to reduce critical sediment sources • Minimum fencing set-backs of 10m for all contributing streams/rivers • Investment in collaborative stakeholder programme to reduce Lake Waikare bank erosion • Mitigation strategy to address sediment, N and P from drains entering natural waterways in the FMU • Review of conditions of consents for the Lower Waikato Waipā Flood Control Scheme to avoid, remedy or mitigate the adverse effects of flood control scheme on Whangamarino Wetland. all consents that make up part of the LWWFCS that discharges into the Pungareghu Canal and Whangamarino Wetland. 	<p>The Director-General seeks the inclusion of new implementation methods to achieve the targets for the proposed Whangamarino Wetland FMU outlined in Appendix E and F to this submission as follows:</p> <ul style="list-style-type: none"> • Investment in catchment wide programmes to reduce critical sediment sources • Minimum fencing set-backs of 10m for all contributing streams/rivers • Investment in collaborative stakeholder programme to reduce Lake Waikare bank erosion • Mitigation strategy to address sediment, N and P from drains entering natural waterways in the FMU • A review of all consents that relate to the Lower Waikato Flood Control Scheme by 2020, to identify optimal approach to address water quality
Wetlands - general	New	The Director-General seeks to include proposed implementation methods to ensure that the significant	The Director-General seeks to include the following implementation methods to

		<p>values of all wetlands are not impacted by elevated levels of nutrient and sediment. The Director-General considers that the following implementation methods are required:</p> <ul style="list-style-type: none"> • Fencing setbacks of 10m for all wetlands In addition to stock exclusion, set backs are required to buffer wetlands from inputs of dissolved and particulate pollutants, principally from runoff. Without these buffers, the edges of wetlands are highly susceptible to water quality impacts, leading to shifts in species composition and ecosystem function • Farm Environment Plans (FEP) to identify critical wetland areas, and identify how elevated nutrients/ sediment will be avoided or mitigated As part of FEP preparation, a key requirement will be mapping of wetland areas, and identification of on-farm methods to reduce inputs of dissolved and particulate pollutants (N, P, sediment). • Farm environment plans to identify where existing wetland drainage can be restored to prevent the drying of wetlands As part of FEP preparation, a key requirement will be identification of methods to reduce wetland drainage. Drying of wetlands leads to release of P from wetland soils 	<p>ensure that the significant values of all wetlands are not impacted by elevated levels of nutrient and sediment.</p> <ul style="list-style-type: none"> • Fencing setbacks of 10m for all wetlands • Farm Environment Plans to identify critical wetland areas, and identify how elevated nutrients/ sediment will be avoided or mitigated • Farm environment plans to identify where existing wetland drainage can be restored to prevent the drying of wetlands • Benchmarking of wetland nutrient and sediment status by 2023 • Establish a research programme to determine the attenuation capacity of natural wetlands.
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		<ul style="list-style-type: none"> • Benchmarking of wetland nutrient and sediment status by 2023 A critical step to review the performance of the proposed plan change is to establish wetland nutrient and sediment benchmarking. This would provide for 10 yearly assessment of changes in wetland nutrient and sediment status and will inform future target setting • To ensure natural wetlands on farms are not over-utilised as an implementation method to improve catchment water quality, a priority action in the proposed plan change is to establish a research programme to determine the attenuation capacity of natural wetlands. • Increasingly, the role of natural wetlands to improve water quality by promoting nutrient uptake and sediment deposition is recognised. However, wetlands themselves are adversely affected by elevated levels of N and P, and increased sedimentation. Knowledge of the attenuation capacity of wetlands is therefore critical, to ensure they are not subject to non-sustainable nutrient loads. Research undertaken at wetlands in the Waikato indicates that increased levels of P and N can lead to significant negative effects on the growth and functioning of peat-forming plants. Elevated levels of P are also associated with increased abundance of invasive plant species. 	
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<p>3.11.4.5 Sub-catchment scale planning/Te whakamāherehere mō te whānuitanga o ngā riu kōawaawa</p>	<p>Support with amendments</p>	<p>The Director-General is not clear from this method how plan users and landowners will understand when a sub-catchment scale plan has “been shown to be required”. Clarification of this is required.</p> <p>Subsection a. The Director-General seeks to ensure that those mitigation measures with the greatest environmental outcomes are prioritised, acknowledging that this could require high cost options to achieve desired outcomes.</p>	<p>The Director-General seeks that the method be retained with amendments that provide greater clarity for plan users around when a sub-catchment plan will be required.</p> <p>The Director-General also seeks to ensure that mitigation measures with the greatest environmental benefits be prioritised recognising that this could require high cost options to achieve desired outcomes</p>
<p>3.11.4.6 Funding and implementation/Te pūtea me te whakatinanatanga</p>	<p>Support</p>	<p>The Director-General is supportive of the intentions signalled by this method. It is recognised that the funding available from the Council for the implementation of Chapter 3.11 will impact significantly on the success of the proposed plan change, particularly in the first 10 years.</p>	<p>The Director-General is generally supportive of method 3.11.4.6 and seek that it be retained as notified.</p>
<p>3.11.4.7 Information needs to support any future allocation/Ngā pārongo e hiahiatia ana hei taunaki i ngā tohanga o anamata</p>	<p>Support with amendments</p>	<p>The Director-General is generally supportive of information gathering and research and encourage the coordination of this method with other stakeholders including the Director-General.</p> <p>The Director-General considers that there is sufficient information available at the present time to provide a land-based allocation regime and seek that this be implemented through the proposed plan change. Information that becomes available in future can be used to inform changes and amendments but allocation needs to be implemented based on current information now.</p>	<p>The Director-General seeks to retain the method with amendments that see the immediate introduction of an allocation regime that considers land type and can be amended as further information becomes available.</p>

<p>3.11.4.8 Reviewing Chapter 3.11 and developing an allocation framework for the next Regional Plan/Te arotake i te Upoko 3.11, te whakarite hoki i tētehi anga toha mō te Mahere ā-Rohe e whai ake ana</p>	<p>Amendments south</p>	<p>The Director-General considers that there is sufficient information available at the present time to provide a land-based allocation regime and seek that this be implemented through the proposed plan change. Information that becomes available in future can be used to inform changes and amendments but allocation needs to be implemented based on current information now.</p>	<p>The Director-General seeks to retain the method with amendments that see the immediate introduction of an allocation regime that considers land type and can be amended as further information becomes available. This is detailed in Paragraphs 10-15 above.</p>
<p>3.11.4.9 Managing the effects of urban development/Te whakahaere i ngā pānga o te whanaketanga ā-tāone</p>	<p>Support</p>	<p>The Director-General is supportive of the intentions signalled by this method and consider that the future development of the built environment is an important factor in understanding cumulative effects from urban development.</p>	<p>The Director-General is supportive of method 3.11.4.9 and seek that it be retained as notified.</p>
<p>3.11.4.10 Accounting system and monitoring/Te pūnaha kaute me te aroturuki</p>	<p>Support with amendment</p>	<p>The Director-General seeks that this method ensures the implementation of coordinated monitoring of wetland and coastal/environments. This is a key aspect of ensuring the proposed plan change is able to achieve implementation methods, targets and rules. The Director-General consider that the most urgently accounting and monitoring is required for:</p> <ul style="list-style-type: none"> • wetlands <ul style="list-style-type: none"> ○ wetland extent/buffer extent ○ soil mineral/organic content (sediment) ○ soil phosphorus ○ soil nitrogen 	<p>The Director-General seeks to retain the method with amendments that ensure that the co-ordinated monitoring of wetland and coastal environments is required with the most urgent accounting and monitoring being required for:</p> <ul style="list-style-type: none"> • wetlands <ul style="list-style-type: none"> ○ wetland extent/buffer extent ○ soil mineral/organic content (sediment) ○ soil phosphorus ○ soil nitrogen

		<ul style="list-style-type: none"> ○ vegetation – key indicator for ecosystem health ● freshwater species (fish) – key indicator for ecosystem health ● MCI - rivers ● Waikato River Delta (estuarine receiving environment) 	<ul style="list-style-type: none"> ○ vegetation – key indicator for ecosystem health ● freshwater species (fish) – key indicator for ecosystem health ● MCI - rivers ● Waikato River Delta (estuarine receiving environment)
3.11.4.11 Monitoring and evaluation of the implementation of Chapter 3.11/Te aroturuki me te arotake i te whakatinanatanga o te Upoko 3.11	Support with amendments	<p>While the Director-General is supportive of the intent of the monitoring and evaluation implementation method, further specificity is required as follows: Subsection a - there needs to be timeframes outlined for when reporting will happen i.e. how regularly throughout the life of the plan.</p> <p>The Director-General also considers that there is a need for an explicit link to the accounting in method 3.11.4.10 from this evaluation method. The frequency of reporting/evaluation is not specified and the Director-General consider that 3-yearly reporting is appropriate.</p> <p>The Director-General is generally supportive of monitoring and evaluation as a tool to determine whether the goals and outcomes sought are being achieved. A significant concern for the Director-General is that the plan lacks methods to achieve the outcomes sought and the proposed plan change needs to be amended to provide greater certainty about how the short and long term water quality targets will be achieved.</p>	<p>The Director-General seeks to ensure that there is a clear link between this method for monitoring and evaluating the implementation of Chapter 3.11 and the accounting and monitoring system developed under 3.11.4.10.</p> <p>The Director-General also seeks that more specificity around the frequency of reporting be provided with this method and recommend that a 3-yearly reporting period be specified.</p>

<p>3.11.4.12 Support research and dissemination of best practice guidelines to reduce diffuse discharges/Te taunaki i te rangahautanga me te tuaritanga o ngā aratohu mō ngā mahi tino whai take hei whakaiti i ngā rukenga roha</p>	<p>Support</p>	<p>The Director-General is supportive of the intentions signalled by this method.</p>	<p>The Director-General seeks that this method be retained as notified.</p>
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10. Rules

66. There is no assessment of the proposed rules included in proposed plan change 1 evident in the s.32 evaluation report. S.32 requires that all policies, rules and other methods that give effect to the objectives of the proposed plan change be examined to determine that they are the most appropriate way to achieve the objectives. The Director-General seeks that the rules in the proposed plan change not progress until evaluation is undertaken to illustrate how the rules proposed are the most appropriate way to achieve the objectives. If the existing rules are determined not to be the most appropriate replacement rules need to be implemented in the Plan.

Provision	Support/ Opposition	Discussion	Relief sought
3.11.5.1 Permitted Activity Rules			
Permitted activity rules - general	Amendments sought	<p>Section 70(1) of the Resource Management Act provides specific guidance to regional council's on including permitted activity rules for the discharge of a contaminant or water into water or the discharge of a contaminant onto land which may result in that contaminant entering water. In order for a permitted activity rule to be added, the RMA requires that the regional council be satisfied that none of the following effects are likely to arise in the receiving water after reasonable mixing, as a result of the discharge of the contaminant (either by itself, or in combination with the same, similar or other contaminants):</p> <ul style="list-style-type: none"> • the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials: • any conspicuous change in the colour or visual clarity: • any emission of objectionable odour: 	The Director-General seeks to ensure the provisions of s.70 of the Resource Management Act are reflected in the proposed plan change by ensuring that land uses that contribute to diffuse pollution in catchments where significant adverse effects are occurring are considered as controlled activities as a minimum.

		<ul style="list-style-type: none"> • the rendering of fresh water unsuitable for consumption by farm animals: • any significant adverse effects on aquatic life. <p>The Director-General considers that based on information available about the water quality of catchments in the Waikato Region, land use activities have resulted in the discharge of contaminants to water and onto land that have resulted significant adverse effects on aquatic life. The Director-General are aware that freshwater fish species, the Banded Kokopu in particular, are significantly affected by high levels of suspended sediment in waterways resulting from discharges. Many of the lakes in the Waikato are in poor condition, which the Director-General attributes to the very high levels of nitrogen, phosphorus and sediment entering these waterbodies. Ecosystem health is directly affected by a poor trophic state. In wetlands, dissolved phosphorus and sediment contributes to the dominance of invasive plants in wetland ecosystems. This is evident in the Whangamarino Wetland.</p> <p>Therefore, future land use activities which involve the further discharge of contaminants in this manner cannot meet the requirements of s.70(1) to be considered as a permitted activity.</p>	
Stock exclusion - general	Support with amendments	The Director-General is generally supportive of the exclusion of stock from water bodies however there are amendments that the Director-General seek to improve this method for managing contaminant discharge including:	The Director-General seeks that sheep excluded from outstanding water bodies throughout Chapter 3.11 and that cattle, horses, deer and pigs are excluded from all waterbodies, including ephemeral

		<ul style="list-style-type: none"> that sheep are excluded from outstanding water bodies. <p>While the Director-General recognises that the impacts of grazing sheep are not as severe as the other animals stated, sheep will still graze vegetation in critical buffer zones and will reduce the ability of the buffer zone to retain sediment.</p> <ul style="list-style-type: none"> Ensuring that cattle, horses, deer and pigs be excluded from all waterbodies including ephemeral waterbodies. 	waterbodies and this is reflected in Schedule C.
Rule 3.11.5.3 - Permitted Activity Rule - Farming activities with a Farm Environment Plan under a Certified Industry Scheme	Oppose	The Director-General opposes the use of certified industry schemes as identified earlier in the submission.	The Director-General opposes the introduction of certified industry schemes in the manner proposed in the proposed plan change. The process excludes public from involvement in the process as it is something that is proposed to operate outside of the plan and without any independent rigour and auditing in place.

Provision	Support/ Opposition	Discussion	Relief sought
3.11.5.4 Controlled Activity Rules			
Rule 3.11.5.4 Controlled Activity Rule - Farming activities with a Farm Environment Plan not under a Certified Industry Scheme	Support with amendment	The Director-General is not clear from the Rule whether it is in fact intended to be a controlled or permitted activity. While the heading states that the rule is a controlled activity rule, the wording within the rule states that the activity is a “permitted activity until...”. It is the Director-General’s view that the rule is intended to be a permitted activity rule but clarification on this is required.	<p>The Director-General seeks to amend rule 3.11.5.4(5)(d) to also exclude sheep.</p> <p>The Director-General seeks that the activity status of rule 3.11.5.4 be clarified as either a permitted or controlled activity.</p>

Provision	Support/ Opposition	Discussion	Relief sought
3.11.5.6 Restrict Discretionary Activity Rules			
Rule 3.11.5.6 - Restricted Discretionary Activity Rule - The use of land for farming activities	Support	The Director-General is supportive of the restricted discretionary activity for farming activities that do not comply with the permitted and controlled activity rules. The Director-General are particularly supportive of the consideration of cumulative effects on water quality of the catchment.	The Director-General seeks to retain the restricted discretionary activity status for farming activities that do not comply with the permitted or controlled activity rules.

Provision	Support/ Opposition	Discussion	Relief sought
3.11.5.7 Non-complying Activity Rules			
Rule 3.11.5.7 - Non-Complying Activity Rule - Land Use Change	Support	The Director-General supports the intent of Rule 3.11.5.7	The Director-General seeks to retain Rules 3.11.5.7 as notified.

11. Schedules

Provision	Support/ Opposition	Discussion	Relief sought
<i>Schedule A - Registration with Waikato Regional Council</i>			
Registration with the Regional Council - general	Support with amendments	<p>While the Director-General is generally supportive of the information that will be gathered through the requirements in Schedule A, there are some requirements that would make the information collected more robust including:</p> <ul style="list-style-type: none"> • Prompt information collection, over a shorter time period • Verification of stocking numbers via reconciliations/receipts • Updates to information required regularly including on stocking numbers and land size (as a result of subdivision/amalgamation). 	<p>The Director-General seeks to retain the property registration requirements under Schedule A while creating greater robustness by requiring:</p> <ul style="list-style-type: none"> • Prompt information collection, over a shorter time period • Verification of stocking numbers via reconciliations/receipts • Updates to information required regularly (6 monthly) including on stocking numbers and land size (as a result of subdivision/amalgamation).
<i>Schedule B - Nitrogen Reference Point</i>			
Nitrogen Reference Point - general	Support	<p>The Director-General is generally supportive of the nitrogen reference point requirements in Schedule B for the following reasons:</p> <ul style="list-style-type: none"> • The NRP is based on past years • The settings for determining the NRP are clear • The NRP is determine by certified operators <p>The Director-General considers that any improvements to the method for recording a NRP need to ensure that the resulting NRP is an accurate reflection on reality on the ground.</p>	<p>The Director-General is generally supportive of the methodology for determining a Nitrogen Reference Point as outlined in Schedule C.</p>

Schedule C - Stock exclusion

<p>Water bodies from which cattle, horses, deer and pigs must be excluded</p>	<p>Support with amendment</p>	<p>The Director-General seeks to amend Schedule C to require in addition to cattle, horses, deer and pigs, that sheep are also excluded from outstanding water bodies.</p> <p>While the Director-General recognises that the impacts of grazing sheep are not as severe as the other animals stated, sheep will still graze vegetation in critical buffer zones and will reduce the ability of the buffer zone to retain sediment.</p> <p>As currently defined, water bodies in Schedule C exclude intermittently flowing rivers, lakes and drains. The Director-General considers that excluding these areas overlooks the contributions that these systems make, especially to shallow lakes. The Director-General therefore seek to include intermittent water bodies in Schedule C also.</p>	<p>The Director-General seeks to amend Schedule C to also require that sheep are excluded from outstanding water bodies.</p> <p>The Director-General seeks to include both continual and intermittent waterbodies in Schedule C.</p>
<p>Distance for new fences from water bodies</p>	<p>Support with amendment</p>	<p>The Director-General considers that a fencing setback of 1m from the bed of a water body, as required by 2, is insufficient to achieve benefits to waterways and aquatic life such as canopy closure, shade and temperature reductions. Narrow buffer areas also have, in the Director-General's experience, ongoing weed and maintenance requirements.</p> <p>Vegetative buffers areas play an important role in the management of water quality particularly the overland flow of faecal material, sediment and the attached phosphorus.</p>	<p>The Director-General seeks to ensure that all new fencing alongside permanent rivers, lakes and outstanding waterbodies be setback at least 10m from the bed of the waterbody and wetlands. For intermittent rivers and wetlands, a 5m setback for new fencing is sought.</p> <p>This requirement is sought not only for fencing outlined in Schedule C, but is applicable to all permitted and controlled activities above.</p>

		<p>The proposed NES for Plantation Forestry proposes a 10m setback for permanent rivers, lakes, and outstanding waterbodies and for smaller/intermittent rivers and wetlands a 5m setback is proposed. The Director-General consider these to be suitable setbacks.</p> <p>Auckland Council provides a useful document to understand riparian setback requirements entitled "Review of Information on Riparian Buffer Widths Necessary to Support Sustainable Vegetation and Meet Aquatic Functions"¹⁶</p>	
Schedule 1 - Requirements for Farm Environment Plans			
Clear goal for Farm Environment Plans	Amendment sought	The Director-General considers that the goal of a farm environment plan should be more clearly stated in Schedule 1.	The Director-General seeks to amend Schedule 1 to provide clearer guidance over the goals for a farm environment plan.
Identification of critical N and P sources for lakes	Amendment sought	The Director-General seeks that farm environment plans identify critical nitrogen and phosphorus sources for lakes to enable the identification of critical on-farm methods to reduce inputs of nitrogen, phosphorus and sediment to lakes.	The Director-General seeks that farm environmental plans be required to identify critical nitrogen and phosphorus sources for lakes and to identify on-farm methods to ensure that the outputs of nitrogen, phosphorus and sediment into lakes is reduced.
Drain restoration	Amendment sought	The Director-General seeks that farm environment plans identify where existing drains can be restored or intercepted to reduce nutrient and sediment inputs into lakes.	The Director-General seeks that farm environment plans identify where existing drains can be restored or intercepted to reduce nutrient and sediment inputs into lakes.

¹⁶<http://www.aucklandcity.govt.nz/council/documents/technicalpublications/TP350%20Review%20of%20Information%20on%20Riparian%20Buffer%20Widths%20Necessary%20to%20Support%20Sustainable%20Vegetation%20and%20Meet%20Aquatic%20Functions.pdf>

<p>Minimum setback for cultivation (b)(iii)</p>	<p>Amendment sought</p>	<p>The proposed NES for Plantation Forestry proposes a 10m setback for permanent rivers, lakes, and outstanding waterbodies and for intermittent rivers and wetlands a 5m setback is proposed. The Director-General considers these to be suitable setbacks for cultivation, especially where adjacent land is subject to frequent land disturbance.</p> <p>The Director-General is particularly concerned about 5m, as currently proposed being an insufficient setback from peat lakes, where peat cultivation causes peat shrinkage rates to increase and affects ground water level and ultimately water quality. Landcare Trust provides guidance for landowners in the peat lake catchment which includes best management practices http://www.landcare.org.nz/files/file/185/guidelines.pdf.</p> <p>The Director-General therefore seeks that a 20m setback be applied for cultivation in the vicinity of peat lakes.</p>	<p>The Director-General considers that a setback for cultivation from permanent rivers, lakes and outstanding waterbodies be setback 10m from the bed of the waterbody. For intermittent rivers and wetlands, a 5m setback for cultivation is sought. For peat lakes, a 20m setback for cultivation is sought which will achieve water quality and ecological benefits for these lakes.</p>
<p>Restrictions on grazing and cultivation on sloping land (b)</p>	<p>Amendment sought</p>	<p>The Director-General considers that the provision of minimum grazing and cultivation setbacks on sloping land is appropriate. However, the required setback distance is dependent on the soil type and therefore the land's erosion susceptibility to ensure that a sufficient setback is achieved.</p> <p>While the Director-General acknowledges that this is a more complex approach to setback, it will ensure that setback distances are appropriate for the locality.</p> <p>The Director-General suggests that a useful approach is that taken by the Horizons Regional Council for cultivation</p>	<p>The Director-General seeks that setbacks for grazing and cultivation on sloping land be evaluated in relation to soil type to ensure an appropriate setback distance is achieved. The Director-General acknowledges that this could result in greater setbacks in some situations but that a minimum standard should be applied to all situations.</p> <p>The Director-General considers that a 20m setback for sloping land of 20degrees or more could be appropriate.</p>

		whereby sloping land (20degrees or more) has a greater (20m) setback for cultivation. An information sheet ¹⁷ is also provided to assist in the interpretation of the rules which the Director-General would encourage.	
Identification and protection of wetland areas	Amendment sought	<p>Functioning wetlands have the potential to have an important role in the management of water quality. The Director-General considers that Farm Environment Plans currently overlook this potential.</p> <p>Currently Farm Environment Plans are required, at 3(e) to illustrate on a spatial risk map “the location of continually flowing rivers, streams, and drains and permanent lakes, ponds and wetlands”. Most wetlands, including permanent and ephemeral have significant values and the Director-General seeks that all wetland areas be identified in Farm Environment Plans.</p> <p>The Director-Generals also seeks that the management of nutrients and sediment to avoid or mitigate adverse effects on these wetland systems are recognise their values as is required by Policy A2 of the NPSFM.</p> <p>Farm Environment Plans should also identify where drainage of wetlands is currently occurring, and provide clear actions for this drainage to cease and to avoid any future drainage of wetlands. The Director-General acknowledges that the drainage of wetlands likely results in nutrient release (of</p>	<p>The Director-General seeks that Farm Environment Plans recognise the potential role for wetlands to assist in the management of water quality and to recognise their significant values by:</p> <ul style="list-style-type: none"> • Ensuring all wetlands, permanent and ephemeral are identified in farm environment plans • That the management of nutrients and sediments ensures that adverse effects on wetland systems and their values are avoided or mitigated • Existing drainage of wetlands is stopped and any future drainage of wetlands is avoided.

¹⁷ <https://www.horizons.govt.nz/HRC/media/Media/Land/Cultivation-Infosheet-FINAL-20141202.pdf?ext=.pdf>

		phosphorus in particular) which has a direct impact of downstream water quality.	
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Schedule 2 - Certification of Industry Schemes			
General	Oppose	The Director-General opposes the use of 'certified industry scheme' concept until there is greater certainty and rigour around how this process will be managed. As it currently stands, the introduction of a process operating outside of the plan process, which excludes public participation, effectively outsources the Council's responsibility for ensuring that farms are operating in accordance with the plan without independent rigour and auditing in place.	The Director-General opposes the introduction of certified industry schemes in the manner proposed in the proposed plan change. The process excludes public from involvement in the process as it is something that is proposed to operate outside of the plan and without any independent rigour and auditing in place.

12. Tables

67. Proposed plan change 1 proposes an 80-year time frame for the long-term freshwater objectives. The Director-General considers that this is pragmatic with respect to some difficult and pervasive water quality issues resulting from land use (e.g. load to come and need for riparian reestablishment/reforestation within the catchment). However, some of the long-term numeric limits/targets are not consistent with the swimmable, healthy and fishable goals of the Vision and Strategy of the Waikato River. In order to achieve the Vision and Strategy for the Waikato River, the Director-General considers that the targets for E. coli should be set at 260/100ml rather than the proposed 540/100ml. Likewise, there are nitrate toxicity attribute levels that remain elevated in the long-term goals that may not provide for ecosystem health in the short or long-term.
68. The short-term targets aim for a reduction in contaminants of 10% over ten years and the Director-General considers that, given the scale of the water quality issues in some catchments this leaves a lot of work to be completed in the following 70 years (and subsequent plans) to get to the 80-year target (which in many cases will not achieve the Vision and Strategy goals). In some cases, rivers are at toxic nitrate levels now. The Director-General consider that effects on ecosystem health need to be explored further, particularly with respect to native fish and macroinvertebrates. Will too much irreversible damage be done within the 10 to 80-year time frame? Extinction of some native fish species within the catchment is a potential effect if ecosystem health is not adequately protected. Many of the 10 year and 80 year limits/targets seem unambitious given the long-time frame set for achieving them. The Director-General seeks that the 10-year and 80-year limits/targets be more ambitious and a stronger emphasis on ecosystem health to ensure that the Vision and Strategy is given effect to. The Director-General also considers that interim 20-year attribute targets should be set to ensure a future target beyond the initial 10-year period that continues to work toward the longer term 80-year targets.
69. The Director-General seeks amendments to Tables 3.11-1 and 3.11-2 as outlined in detail below.

Provision	Support/ Opposition	Discussion	Relief sought
Table 3.11-1: Short term and long term numerical water quality targets for the Waikato and Waipā River catchments/Ngā whāinga ā tau taupoto, tauroa hoki mō te kounga wai i te riu o ngā awa o Waikato me Waipā			
Table 3.11-1 Headings	Amendment sought	<p>Rather than the table column headings being labelled “short term” and “80-year” targets, the Director-General seeks that these column heading be replaced with the dates that these targets must be achieved by. Without an actual date, it is not clear when these targets are actually required to be met.</p> <p>The Director-General also considers that interim 20-year attribute targets should be set to ensure a future target beyond the initial 10-year period that continues to work toward the longer term 80-year targets.</p>	<p>Amend Table 3.11-1 to replace current “short term” and “80-year” column headings with dates when the targets will be achieved.</p> <p>The Director-General also considers that interim 20-year attribute targets should be set for a date when these targets will be achieved to ensure a future target beyond the initial 10-year period that continues to work toward the longer term 80-year targets.</p>
Lake Values to achieve ecosystem health, contact recreation and restore the Waikato River	Amendment sought	<p>The Director-General is supportive of long term, staged approach to improving water quality however the water quality attribute targets for lakes set in Table 3.11-1 do not equate to the “long term restoration and protection of water quality” that is the intent of Objective 1.</p> <p>Targets for lakes are all set at the National Bottom Line or for no reduction in contaminants. The National Bottom Line outlined in the NPSFM does not achieve ecosystem health nor does it safeguard the life-supporting capacity of water as required by the purpose of the Act. To give effect to the Vision and Strategy, the requirements of the RMA and achieve ecosystem health for lakes, the Director-General</p>	<p>The Director-General seeks water quality targets for lakes be raised to ensure that “long term restoration and protection of water quality” is achieved.</p> <p>The Director-General also seeks that the water quality attribute targets for lakes be set to ensure that water quality targets are set to enhance water quality in lakes to ensure ecosystem health and the lifesupporting capacity of the waterbodies is achieved.</p>

		seeks that targets for lakes be set to ensure lake water quality is enhanced, even for those lakes already at the National Bottom Line.	
Pungarehu Canal/Stream	Amendment sought	Table 3.11-1 omits the Pungarehu Canal/Stream. It is the flow path for very high loads of sediment and Phosphorus from Lake Waikare into the Whangamarino Wetland. The Director-General is aware that WRC have been monitoring this site from at least 2003 and achieving water quality improvements at this site are critical and must be included in Table 3.11-1.	The Director-General seeks that the Pungarehu Canal/Stream be added to Table 3.11-1.
Suspended sediment (TSS) and deposited fine sediment	Amendment sought	The Director-General considers that a target of suspended sediment and deposited fine sediment need to be included in Table 3.11-1. While the Director-General acknowledges that clarity is a related target to sediment, it is affected by other factors.	The Director-General seeks to include a target for suspended sediment and deposited fine sediment to be included in Table 3.11-1.
Medium term targets	Amendment sought	The Director-General considers that medium-term targets are required in the proposed plan change to indicate how ongoing improvement toward the long term 80-year targets and to provide focus once the 10-year short term targets have been achieved. The Director-General suggests 20-year targets should be set for Freshwater Management Units.	The Director-General seeks that medium-term 20-year water quality targets be included in Tables 3.11-1 and as an initial target, the Director-General suggests that a 20% improvement in water quality over 20 years is appropriate.
Outstanding freshwater bodies	Amendment sought	The NPSFM requires that overall freshwater quality is maintained or improved while protecting the significant values of outstanding freshwater bodies. The proposed plan change does not identify Outstanding freshwater bodies. The Director-General seeks to include recognise outstanding freshwater bodies in the Plan and to work with	The Director-General seeks the recognition of and identification of values for outstanding freshwater bodies. The Department of Conservation are willing to work with the Council to determine outstanding freshwater bodies and their values and consider at a minimum, the

		<p>the Department of Conservation in determining the values of these outstanding water bodies. As a minimum, the Director-General considers that the following should be identified as outstanding freshwater bodies:</p> <ul style="list-style-type: none"> • Waikato River, river mouth and delta Waikato River, river mouth and delta have high cultural, historic and aesthetic value. It is nationally significant, as one of the only examples of braided river delta in the North Island. No other site like this occurs in the Waikato region, and it supports a very high diversity of indigenous species, freshwater and estuarine. • Whangamarino Wetland One of the most significant wetland systems in New Zealand. Second largest wetland (7000ha) in the North Island. One of the best examples of a raised bog, fen, swamp ecosystems in New Zealand National stronghold for threatened species, such as Nationally Endangered Australasian Bittern Internationally recognised as a wetland site (Ramsar Convention)¹⁸. • Waitomo Caves/River (Karst system) Nationally rare karst system and is one of only three major karst systems in NZ. 	<p>following should be recognised as outstanding freshwater bodies:</p> <ul style="list-style-type: none"> • Waikato River including the river mouth and delta • Whangamarino Wetland • Waitomo Caves/River • Waikato Peat lakes
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¹⁸ Cromarty, P. 1996 A Directory of Wetlands in New Zealand <http://www.doc.govt.nz/documents/science-and-technical/nzwetlands00.pdf>

		<ul style="list-style-type: none"> • Waikato Peat Lakes The Waikato peat lakes are nationally significant and represent the largest collection of this wetland type in New Zealand. They are the few remaining areas of wetland associated with the formerly extensive Komakarau, Rukuhia and Moanatuatua peat bogs. The Serpentine/Rotopiko lakes support some of the best examples of intact submerged vegetation nationally. Lake Rotomānuka is the oldest and deepest of the Waikato peat lakes and has the best water quality. Lake Maratoto ranked as the highest quality peat lake in the region for its biodiversity values (see SNA report). It has the largest area of adjoining wetland remaining, and is one of few peat lakes that has maintained its natural dystrophic character.¹⁹ A number of the peat lakes also have historic pa sites (fortified Maori settlement) associated with them. These archaeological sites are associated with the early occupation of the Waikato basin. Several lakes have been the subject of investigations (e.g. Lakes Mangakaware and Ngaroto). Remains of these settlements still exist in the lakes in a semi water-logged state, which has helped to preserve them and their features. • Lake Rotokotuku 	
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¹⁹ Cromarty, P. 1996 A Directory of Wetlands in New Zealand <http://www.doc.govt.nz/documents/science-and-technical/nzwetlands00.pdf>

		<p>Lake Rotokotuku is a small privately owned lake surrounded by approximately 6ha of wetland. The lake was assessed by WRC in the late 1970s and was recommended for consideration as a scientific reserve status because of its high scientific and wildlife values at the time (Henriques 1979²⁰). WRC recently revisited the lake and have worked with the landowner to develop a fencing and restoration plan for the lake and its surrounding wetland to return it to a near natural state. The wetland mostly comprises modified manuka shrubland and Ω sedgeland, with kahikatea and bracken fern also present. The lake is deep (8m) for its size, and is naturally dystrophic in character. It maintains an acid pH of 5.23, which is the lowest pH of any of the Waikato lakes. Surveys of the lake were undertaken in 2011 by WRC staff. These surveys indicated that the lake was depauperate in fish species (only eels at low densities), but supported large and dense populations of freshwater invertebrates, including caddis flies, damsel flies, dragonflies, true flies, copepods, ostracods, and corixidae beetles. Damselies, dragonfly larvae and Corixid were exceptionally abundant. The samples taken during these surveys also yielded the first record of a species of caddis fly (Triplectidina) from the Waikato region since 1994, and a specimen of the snail, Glyptophysa that was of conservation significance.</p>	
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²⁰ Henriques, P.R. 1979 A reconnaissance survey of Waitomo County freshwater swamplands. Waikato Valley Authority Technical Report. Hamilton, WVA.

Provision	Support/ Opposition	Discussion	Relief sought
<p>Table 3.11.2 List of sub-catchments showing Priority 1, Priority 2, and Priority 3 sub-catchments/Te rārangi o ngā riu kōawaawa e whakaatu ana i te riu kōawaawa i te Taumata 1, i te Taumata 2, me te Taumata 3</p>			
Priority methodology and implementation	Amendments sought	<p>The Director-General is generally supportive of prioritising the management of land and water resources. The Director-General is concerned however, about the methodology used to prioritise sub-catchments. The approach taken in the proposed plan change is to prioritise sub-catchments based on current state and does not take into account the important values of sub-catchments or the sensitivity of individual waterbodies to the effects of poor water quality.</p> <p>The Director-General acknowledges that timeframes for water quality improvements to manifest are very long due to lakes having legacy loads that have built up over many years. The Director-General acknowledges that as a result of this, the time to rectify water quality issues is long. The Director-General therefore wishes to see all lake and wetland sub-catchments included as priority 1 to ensure 2096 targets are reached.</p>	The Director-General seeks to retain the table with amendments that see all wetland and lake sub-catchments be included as priority 1 in Table 3.11-2.
Priority for restoration plans and farm environment plans already developed	New	The Director-General is concerned that the proposed plan change overlooks the existing effort that has been put into lake restoration plans and farm environment/management plans.	The Director-General seeks that the existing works that have already been undertaken for lakes by way of lake restoration plans and farm environment/management plans be immediately implemented and enforced.

		<p>In addition to the increased priorities for all lakes and wetlands, the Director-General considers it is imperative that existing plans are implemented and enforced immediately.</p> <p>Appendix J provides a table outlines existing works that have already been undertaken for lakes and seeks that this be used as a base for the immediate implementation of existing management and restoration plans.</p>	Appendix J to the submission provides a base to start this.
Pungarehu Canal/Stream	Amendment sought	Table 3.11-2 omits the Pungarehu Canal/Stream. It is the flow path for very high loads of sediment and Phosphorus from Lake Waikare into the Whangamarino Wetland. The Director-General is aware that WRC have been monitoring this site from at least 2003 and achieving water quality improvements at this site are critical. The Director-General therefore requests that the Pungarehu Stream be included in Table 3.11-2 as a Priority 1.	The Director-General seeks that the Pungarehu Canal/Stream be added to Table 3.11-2 as priority 1.

13. Appendix A: Additional water quality attributes and limits/targets

In order to ensure ecosystem health, primary contact and mahinga kai values are appropriately provided for in proposed plan change 1, in keeping with the Vision and Strategy for the Waikato and Waipā Rivers, the Director-General seeks additions to attributes and limits in proposed plan change 1 outlined in Tables 1-4 below.

Table 1. NOF attributes to apply to tributaries of the Waikato River and the rivers and streams of the Waipā catchment (excepting those flowing into lakes where the lakes standards should apply to inflowing rivers) in addition to those proposed in proposed plan change 1.

Ecosystem Health	Trophic state (periphyton)²¹	Dissolved oxygen²²
A	<50 mg/m ²	≥8mg/L (7-day mean minimum) and ≥7.5mg/L 1-day min)
B	50 - 120 mg/m ²	≥7.0 and <8.0 (7-day) and ≥5.0 and <7.5 (1-day)
C	120 - 200 mg/m ²	≥5.0 and <7.0 (7-day) and ≥4.0 and <5.0 (1-day)
D	>200 mg/m ²	<5 (7-day) and <4 (1-day)

²¹ Attribute applies only to naturally hard-bottomed rivers. Although many of the rivers and streams in the Waikato-Waipā are naturally soft-bottomed, not all rivers and streams are. Some rivers and streams have become heavily sedimented over time due to the nature of pastoral development, encroachment of grasses and weeds, and a lack of riparian margin in intensively developed catchments. Some of these catchments may be restored to a hard-bottomed state over time if sediment, riparian margins and nutrients are managed appropriately. Additionally, periphyton can grow on plant and wood substrates within streams where nutrient and flow conditions are suitable. The technical information on periphyton risk (Collier et al. 2007, cited in Scarsbrook 2016) is out of date and based only on inadequate data (annual or three-yearly), which is not reliable to determine maximum annual periphyton biomass or cover and the duration and frequency of any nuisance growths.

²² The NOF requires dissolved oxygen as an attribute below point sources. However, dissolved oxygen is a critical component of the life-supporting capacity of freshwater and is recommended for inclusion more generally as a freshwater objective for all rivers and streams in the Waikato-Waipā. Little is known about the state of dissolved oxygen as there is a paucity of continuous monitoring data. Non-regulatory methods are needed in the Plan for strategic, continuous dissolved oxygen monitoring over summer months.

Table 2. Recommended additional attributes and limits to apply to tributaries of the Waikato River and the rivers and streams of the Waipā catchment.

NB These limits are separate from the targets for lakes however the lake standards should apply to rivers flowing into lakes, where this would apply a more stringent standard

Ecosystem Health	MCI²³	Periphyton %WCC cover²⁴	Clarity²⁵ (m)	Deposited sediment % cover²⁶
A	>120	<20 excellent	≥3	<20% cover or within 10% reference
B	100 - 120	20-40 good	≥1.6 and <3	<20% cover or within 10% reference
C	80 - 100	40-55 fair	≥1.0 and <1.6	<25% cover or within 10% reference
D	<80	>55 poor	<1.0m	>25% cover

In order to deal with cumulative stressors to some degree, Davies-Colley et al. (2013) recommended an approach to combining assessment of Temperature, pH and dissolved oxygen.

²³ Based on: Collier KJ, Clapcott J, Neale M 2014. A macroinvertebrate attribute to assess ecosystem health for New Zealand waterways for the national objectives framework - Issues and options. Environmental Research Institute report 36, University of Waikato, Hamilton and the submission by the New Zealand Freshwater Sciences Society on amendments to the NPS-FM.

²⁴ Attribute applies only to naturally hard-bottomed rivers and applies the methods of Matheson et al. (2012).

²⁵ From Smith and Davies-Colley (1992), cited by Scarsbrook (2016).

²⁶ Applies to naturally hard bottomed rivers and streams, using the protocols and methods in Clapcott et al. (2011). See also comments on sedimentation in footnote 1.

Table 3. Recommended limits to support attributes and limits for tributaries of the Waikato River and the rivers and streams of the Waipā catchment.

NB These limits are separate from the targets from lakes, except in the instance where a river runs into a lake, in which case the more stringent limits should apply.

Ecosystem Health/periphyton objective	Dissolved inorganic nitrogen²⁷ (DIN) mg/m³	Dissolved reactive phosphorus (DRP) mg/m³	Toxicants²⁸ / metals (ANZECC 2000)	Water temp.	pH	Reduction in water clarity²⁹ (% black disc)
A	<150	<6	99% protection	≤18°C	6.5 < pH < 8.0	≤20
B	150-400	6-10	95% protection	≤20°C	6.5 < pH < 8.5	≤20
C	400-800	10-15	95% protection	≤24°C	6.0 < pH < 9.0	≤30
D	>800	>15	80% protection	>24°C	pH < 6 or pH >9	>30

²⁷ Recommended limits for dissolved nitrogen and phosphorus are based on a number of sources and my experience of nutrient thresholds appropriate to manage the risk of periphyton biomass or cover regularly exceeding the NOF biomass attribute bands and the cover attributes recommended from Matheson et al. (2012). The same or similar dissolved nutrient limits have been implemented in Plan Change 6 for the Tukituki catchment, Hawkes Bay (based on the evidence of Professor Russell Death); Plan change 6a Otago Region; and One Plan Schedule D targets, Manawatū-Whanganui Region (based on the evidence of Dr Barry Biggs). These limits are appropriate for rivers and streams where periphyton biomass and/or cover attributes are applied to manage effects on ecosystem health through elevated trophic state. These trophic ecosystem health effects occur at nutrients thresholds less than the most stringent attribute for nitrate toxicity.

²⁸ Excluding nitrate and ammonia toxicity.

²⁹ As a result of point source discharges or sediment producing activities requiring resource consent.

Table 4. Recommended additional attributes and limits to support primary contact and mahinga kai values.

Human Health for recreation	E. coli / 100ml (attribute)	Periphyton cover (peri WCC % ³⁰) (limit)	Deposited sediment - aesthetics ³¹ (limit)	Benthic cyanobacteria cover ³² (attribute)
Suitable for primary contact	≤260 95 th percentile	≤30%	≤25%	<50%
Unsuitable for primary contact	>260 95 th percentile	>30%	>25%	>50%

References

Clapcott JE, Young RG, Harding JS, Matthaei CD, Quinn JM, Death RG 2011. Sediment Assessment Methods: Protocols and guidelines for assessing the effects of deposited fine sediment on in-stream values. Cawthron Institute, Nelson, New Zealand.

Collier KJ, Clapcott J, Neale M 2014. A macroinvertebrate attribute to assess ecosystem health for New Zealand waterways for the national objectives framework – Issues and options. Environmental Research Institute report 36, University of Waikato, Hamilton.

Davies-Colley R, Franklin P, Wilcock B, Clearwater S, Hickey C 2013. National Objectives Framework: Temperature, Dissolved Oxygen & pH Proposed thresholds for discussion. NIWA Client Report No: HAM2013-056. Prepared for the Ministry of the Environment.

Matheson F, Quinn J, Hickey C 2012. Review of the New Zealand instream plant and nutrient guidelines and development of an extended decision making framework: Phases 1 and 2 final report. Prepared for the Ministry of Science & Innovation Envirolink Fund. NIWA Client Report No: HAM2012-081.

³⁰ For naturally hard-bottomed rivers and streams based on the recreational thresholds developed by Matheson et al. (2012).

³¹ For naturally hard-bottomed rivers and streams based on the guidelines developed by Clapcott et al. (2011).

³² For naturally hard-bottomed rivers and streams based on the alert levels developed by MfE/MoH (2009).

Ministry for the Environment and Ministry of Health. 2009. New Zealand Guidelines for Cyanobacteria in Recreational Fresh Waters – Interim Guidelines. Prepared for the Ministry for the Environment and the Ministry of Health by SA Wood, DP Hamilton, WJ Paul, KA Safi and WM Williamson. Wellington: Ministry for the Environment.

Smith DG, Davies-Colley RJ 1992. Perception of water clarity and colour in terms of suitability for recreational use. *Journal of Environmental Management* 36: 225-235.

14. Appendix B: Changes sought to trophic state and toxicity attributes proposed by Proposed Plan Change 1

Notwithstanding that trophic state attributes and limits/targets for dissolved nitrogen and phosphorus are needed for the Waikato tributaries and the entire Waipā FMU, the Director-General seeks that nitrate and ammonia toxicity attributes be consistent with the desires for Ecosystem Health at each site and consistent across all attributes. The Director-General seeks that further work is undertaken to look at critical sites/reaches for ecosystem processes (e.g. juvenile rearing or spawning habitat) and biodiversity/threatened species hotspots or strongholds to ensure nitrate and ammonia toxicity bands are suitable for the state of Ecosystem Health in these locations.

In the interim, the Director-General seeks that the following changes to the proposed attributes for each FMU:

14.1 Upper Waikato FMU

1. Short-term attributes for chlorophyll a for Waikato River at Whakamaru Tailrace.
2. Add clarity attributes to Torepatutahi Stream (Vaile Rd Br) and Waiotapu Stream (Homestead Rd Br).
3. Nitrate nitrogen improvements required for Kawaunui Stream are not consistent (i.e. median requires improvement to a B state and 95th percentile requires improvement to an A state. The Director-General seeks that both are improved to an A state so 80-year target for nitrate (median) should be 1.0 mg/m³.
4. Same applies to Waiotapu Stream (Campbell Rd Br) with respect to ammonia toxicity. 80-year median target is for a C band, whereas 80-year maximum is for an A band. Additionally a considerable degree of improvement in the ammonia maximum is planned for between 10 and 80 years from now. Short term improvement should be greater as there is no certainty that the long-term target will be met beyond the current plan. Ammonia attributes should read 0.03 (median 80-year target) with a reduced short-term target at least ≤0.24, and ≤0.24 (maximum short-term target).

5. Mangamingi Stream (Paraonui Rd Br) inconsistency of nitrate nitrogen improvements. Median nitrate (80-year target) should be changed to 1.0. Short term target should require more improvement in next ten years (i.e. <2.4 at least, if not lower than this).

14.2 Middle Waikato River FMU

6. Waikato River (Narrows Boat Ramp and Horotiu Br) - Trophic state and total nitrogen and phosphorus attributes aim for B band while toxicity attributes are aiming for an A band. Trophic state targets should be consistent with toxicity targets to achieve an "A" state of Ecosystem Health.
7. Mangaone Stream (annebrooke Rd Br) has a B state for median nitrate toxicity targets and an A band for 95th percentile toxicity targets. Median nitrate toxicity (80-year) target should be 1.0 with a short term median target of at least <2.4.
8. Waitawhiriwhiri Stream (Edgecumbe St) has an inconsistency in ammonia with the median aiming for a B band and the maximum aiming for an A Band. Median (80-year target) should be 0.03 with the short term target for ammonia at least <0.24.

14.3 Lower Waikato River FMU

9. Waikato River (Huntly-Tainui Br, Mercer Br and Tuakau Br) trophic state is inconsistent with toxicity bands. Chlorophylla A and total nitrogen and phosphorus 80-year targets should all be the lower threshold of the A band, rather than the B band.
10. A bottom line for clarity is needed for the Waikato River at Mercer Br.
11. Komakorau Stream (Henry Rd) B band nitrate toxicity (95th percentile 80-year target) should be consistent with the A band median target - recommend this is changed to 1.5 and that the short-term target is at least <2.4. Ammonia targets at this site (median and maximum) should also be changed to reflect the A band state for Ecosystem Health.

12. Whakapipi Stream (SH22 Br) is inconsistent in the Band B for nitrate toxicity vs the A band for ammonia toxicity. Median ammonia (80-year target) should be 1.0 and the 95th percentile (80-year) target 1.5. Short term targets should also be reduced to reflect the degree of change needed to meet the A band state. The Director-Generals seeks a median of at least <2.4 and a 95th percentile of at least <3.5 are applied.

14.4 Waipā River FMU

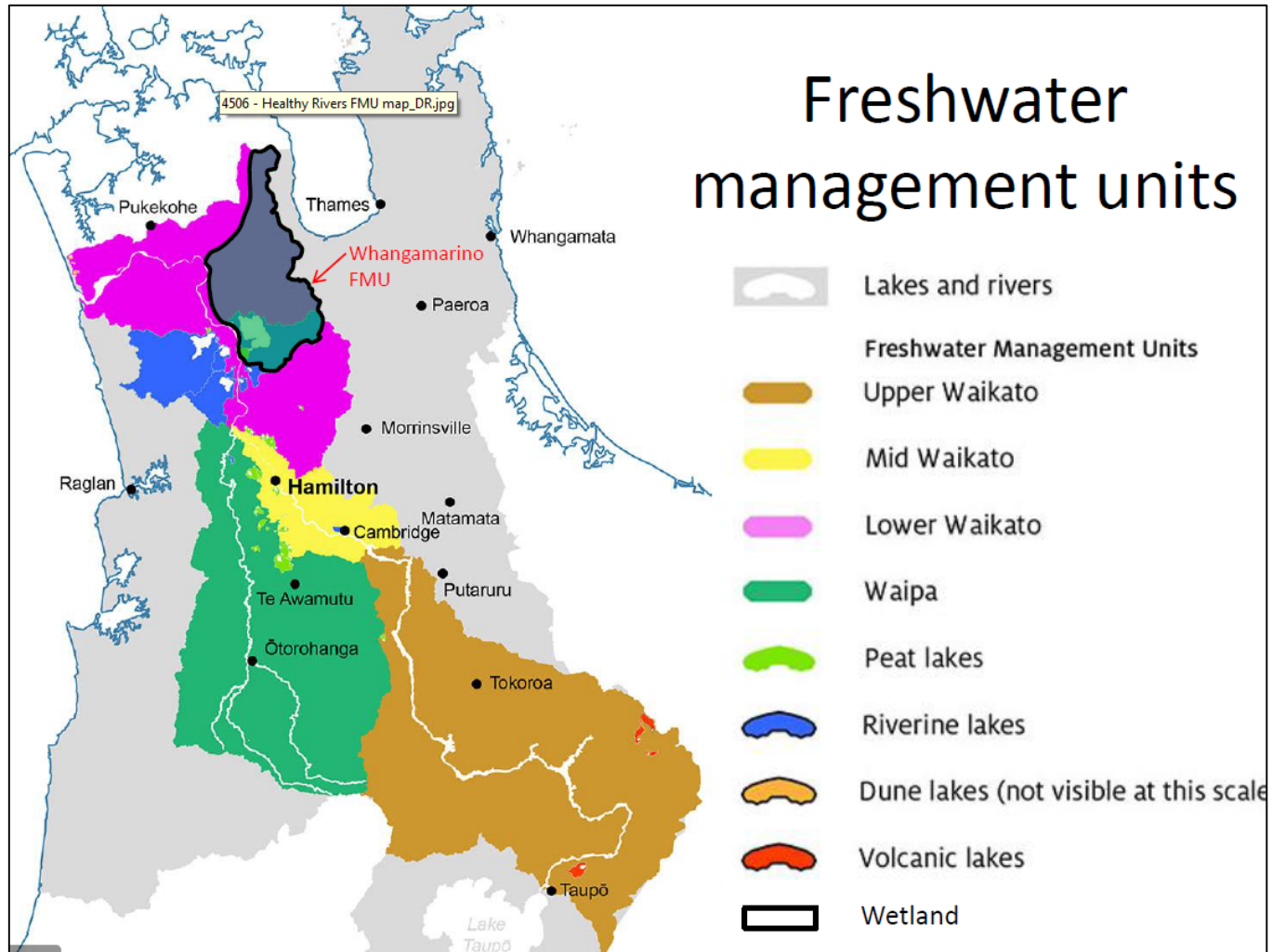
13. All sites in the Waipā River FMU have nitrate and ammonia toxicity targets within the A band for Ecosystem Health - this FMU requires trophic state attributes for chlorophyll a and dissolved nitrogen and phosphorous.

15. Appendix C: Native freshwater fish species in the Waikato River catchment

Native freshwater fish species recorded in the Waikato River catchment. All species except for giant bully have also been recorded in the Waipā River catchment. Data downloaded from NZ Freshwater Fish Database, 4 October 2016.

Common name	Scientific name	Threat status	Last recorded
Longfin eel	<i>Anguilla dieffenbachii</i>	At Risk, Declining	2016
Shortfin eel	<i>Anguilla australis</i>	Not threatened	2016
Giant kōkopu	<i>Galaxias argenteus</i>	At Risk, Declining	2016
Kōaro	<i>Galaxias brevipinnis</i>	At Risk, Declining	2012
Banded kōkopu	<i>Galaxias fasciatus</i>	Not threatened	2016
Inanga	<i>Galaxias maculatus</i>	At Risk, Declining	2016
Shortjaw kōkopu	<i>Galaxias postvectis</i>	Threatened, Nationally Vulnerable	2012
Lamprey, piharau	<i>Geotria australis</i>	Threatened, Nationally Vulnerable	2011
Cran's bully	<i>Gobiomorphus basalis</i>	Not threatened	2014
Common bully	<i>Gobiomorphus cotidianus</i>	Not threatened	2016
Giant bully	<i>Gobiomorphus gobioides</i>	Not threatened	2010
Redfin bully	<i>Gobiomorphus huttoni</i>	At Risk, Declining	2015
Torrentfish	<i>Cheimarrichthys fosteri</i>	At Risk, Declining	2016
Common smelt	<i>Retropinna retropinna</i>	Not threatened	2016
Black mudfish	<i>Neochanna diversus</i>	At Risk, Declining	2015

16. Appendix D: Whangamarino Wetland FMU extent



17. Appendix E: Whangamarino Wetland FMU Attributes

In addition to the primary attributes sought by the Director-General for all wetlands, the following attributes are sought for the Whangamarino FMU specifically:

- Total Phosphorus - Median TP Conc - applied to all rivers/stream sites in FMU
- Sediment - Median Turbidity - applied to all rivers/stream sites in FMU
- Sediment - Mean Annual TSS Load - applied to the Pungarehu Canal/Stream site

The existing attributes in Table 11.1 will also apply.

The 80 year targets for the additional primary attributes for the Whangamarino FMU are:

The additional primary attributes for the Whangamarino FMU are:	80 Year Targets³³	Rationale
TP Median Conc (mg/m3)	50 mg/m3 ³⁴	The Whangamarino FMU is adversely affected by very high phosphorus levels. The 80-year target of 50 mg/m3 aims to reduce TP overtime.
Turbidity (NTU) Note: Other measures (FNU, TSS, or SSC) could also be applied as a measure of sediment concentrations. But water quality monitoring	20 NTU at all sites in FMU except Pungarehu Canal ³⁵	The Whangamarino FMU is adversely affected by very high levels of suspended sediment. The 80-year target of 20 NTU aims to reduce sediment overtime.
	50 NTU at Pungarehu Canal	A higher target of 50 NTU is applied to the Pungarehu Canal given the very degraded condition of this site. The 80-year target is consistent with the proposed TP target.

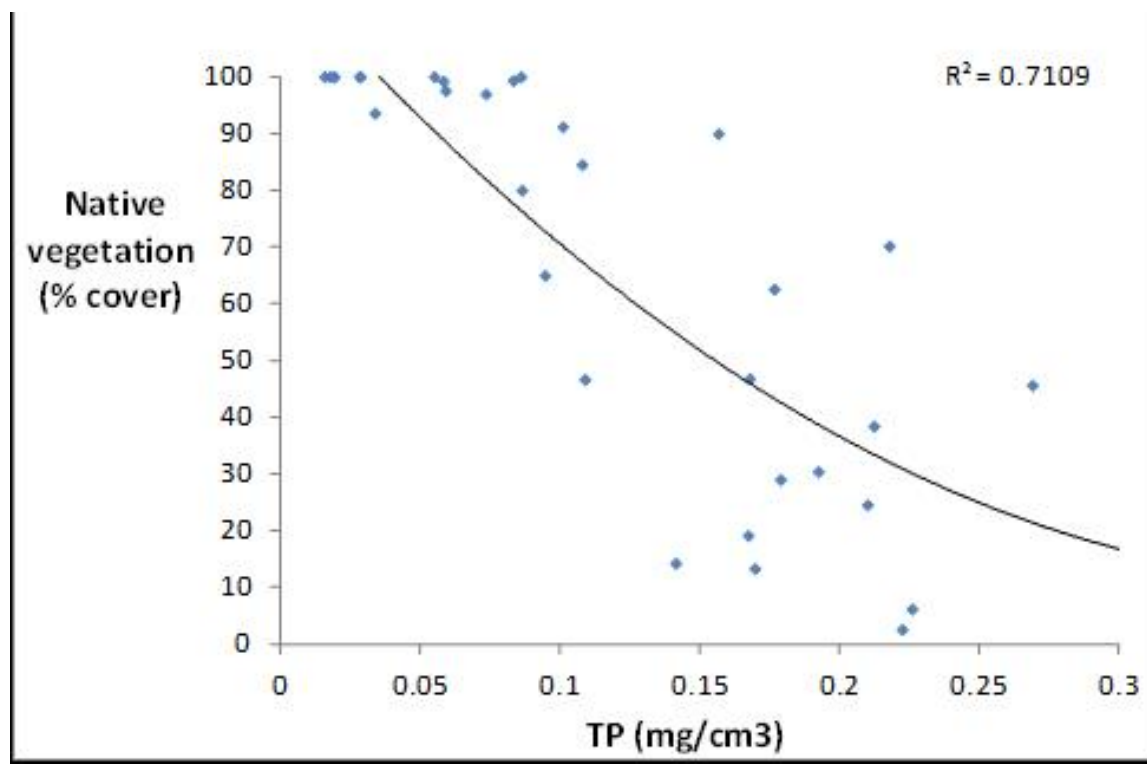
³³ In addition to the 80 year targets, short-term targets of 10% reduction over 10 years, and 20% reduction over 20 years are required

³⁴ If site is in a better water quality state, 80 year target is to maintain

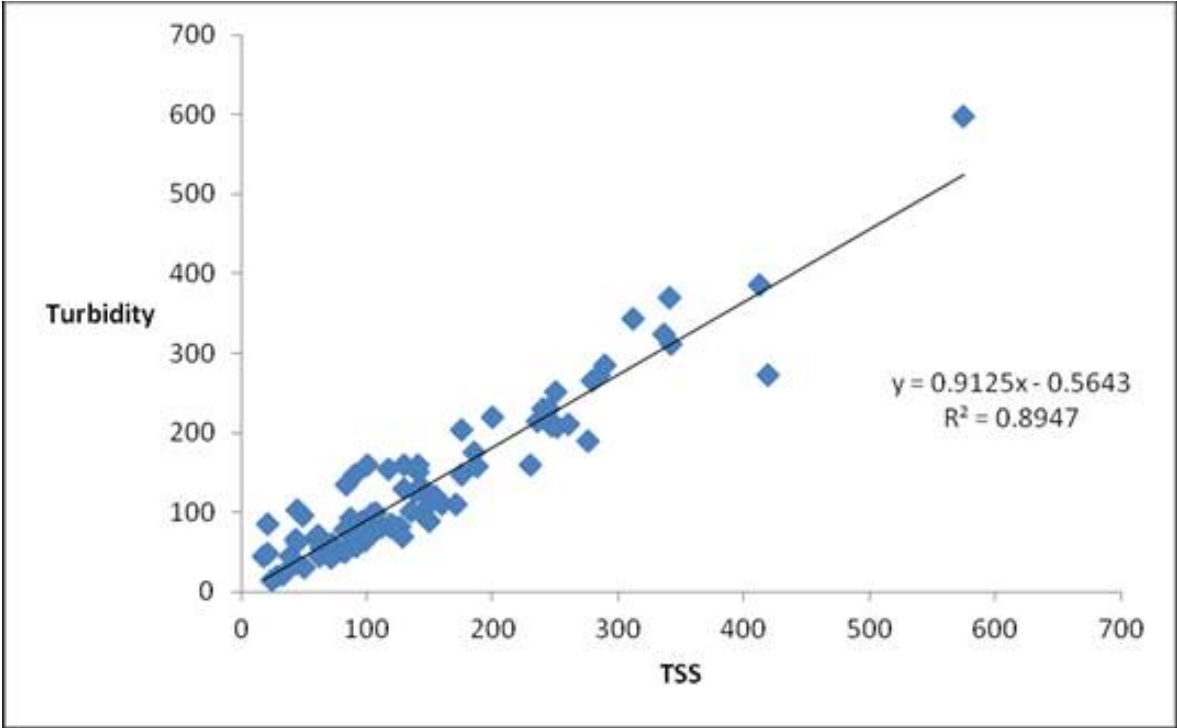
³⁵ If site is in a better water quality state, 80 year target is to maintain

undertaken by WRC has predominantly collected data NTU.		
TSS Annual Load (T/yr)	10% reduction by 2030 at Pungarehu Canal	Water quality in the Pungarehu Canal is driven by the concentration of sediment, as well as the discharge volume regulated by a control gate. Achieving only the turbidity target for this site will not necessarily achieve the EH outcome. This doesn't apply to unregulated sites.

In addition, the following figure assist to illustrate the significant role that sediment (and Total Phosphorus, given Phosphorus is predominantly bound to sediment) has on the ecosystem health of wetlands. This data is from monitoring sites in Whangamarino Wetland, and illustrates the direction relationship between Phosphorus and the abundance of native plants.



Data from WRC indicates the relatively good relationship between turbidity (NTU) and TSS (total suspended sediment) within the Whangamarino FMU. (to illustrate this the figure below is from monitoring at Pungarehu Canal at Waerenga Rd).



18. Appendix F: Whangamarino Wetland FMU values

Site	Current (data from LAWA, accessed 21 Feb 2017)			80 year ³⁶ (except for TSS load)			+ other attributes in table 11-1
	Turbidity (NTU)	TP Median Conc. (mg/m3)	TSS Annual Load (T/yr)	Turbidity ³⁷ (NTU)	TP Median ³⁸ Conc. (mg/m3)	TSS Annual Load (T/yr)	
Matahuru Stm Waiterimu Road Below Confluence	32	90	na	20	50	na	Refer table 11-1
Waerenga Stm SH2 Maramarua	8 (Waerenga at Taniwha Rd)	50 (Waerenga at Taniwha Rd)	na	20	50	na	Refer table 11-1
Whangamarino River Jefferies Rd Br	21	90	na	20	50	na	Refer table 11-1
Mangatangi River SH2 Maramarua	14	70	na	20	50	na	Refer table 11-1
Mangatawhiri River Lyons Rd Buckingham Br	4	20	na	20	50	na	Refer table 11-1
Whangamarino River Island Block Rd	41	160	na	20	50	na	Refer table 11-1
Pungarehu Canal at Waerenga Rd or Farm Bridge This is a key additional site – not contained in Table 11.1	95 (WRC data for period 1995-2013)	~160	Mean TSS load for the period 1980-2012 was	50	50	10% reduction by 2030	WRC to add data from existing monitoring site

³⁶ In addition to the 80 year targets, short-term targets of 10% reduction over 10 years, and 20% reduction over 20 years are required

³⁷ If site is in a better water quality state, 80-year target is to maintain

³⁸ If site is in a better water quality state, 80-year target is to maintain

			approx. 22,000 T/yr. ³⁹				
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³⁹ WRC are actively monitoring this site to refine the estimate.

19. Appendix G: Proposed wetland attributes for ecosystem health (water quality)

Wetland type	Description	Attribute relating to water quality (narrative objective)			
		Soil TP conc.	Soil TN conc.	Sedimentation	Hydrology
Bog	Bog wetlands are nutrient poor, poorly drained and aerated and usually acid. The water table is often close to or just above the ground surface, with rainwater the only source of water. These wetlands are dominated by indigenous vegetation that is representative of bogs in the Waikato, including peat forming plant species.	Nutrient status (TP) is within healthy range for the specific wetland type	Nutrient status (TN) is within healthy range for the specific wetland type	Inputs of external sediment are within healthy range for the specific wetland type	Hydrological regime, if altered, does not exacerbate water quality impacts
Fen	Fen wetlands are of low to moderate acidity and fertility and the water table is usually close to or just below the surface. These wetlands are dominated by indigenous vegetation that is representative of fens in the Waikato, including species adapted to low nutrient environments, such as sedges.				
Swamp	Swamp wetlands are generally of high fertility, receiving nutrients and sediment from surface run-off and ground water. These wetlands are dominated by indigenous vegetation that is representative of swamps in the Waikato, including vegetation cover that is often intermingled.				
Marsh	Marsh wetlands are mineral wetlands with good to moderate drainage that are mainly groundwater or surface water fed and characterised by fluctuation in the water table. Marsh wetlands can be differentiated from swamp wetlands by having better drainage, generally a lower water table and usually more mineral substrate and higher pH.				

20. Appendix H: Lakes of highest priority

Lake name	Ownership	Current Water Quality (including trophic state ⁴⁰)	Vulnerability	Restoration Potential	Existing Information
Dune Lakes					
Lake Otamatearoa	Private	Moderate-High (TLI - 4)	High (identified in 8A of WRPS)	High (also aquatic weeds)	Recent 2016 survey Fencing and riparian restoration project underway (funded by WRC, WRA and landowner)
Lake Puketi	DOC	Excellent WQ (TLI 3.54 in 2010/11)	High	High	Recent 2016 survey - including water quality measurements Fencing and riparian restoration project underway funded by WRC/ DOC/WCEET and landowner)
Lake Rotoiti	Private	WQ slightly degraded	Moderate	High	Recent 2016 survey - including water quality measurements Fencing and riparian restoration project underway (funded by WRC/DOC/WRA)
Lake Parkinson	Private	WQ somewhat degraded (only just D band for TN)	Moderate	Moderate	Recent 2016 survey - including water quality measurements Riparian restoration project underway funded by WRC/WRA and landowner
Peat Lakes					
Lake Rotomānuka	DOC	Peat lake with highest WQ	High	High	Living Water project (substantial restoration)

⁴⁰ Trophic Lake Index (TLI) scores for 2008-2012 taken from Table 1 of volume 2 of the Waikato Regional Council Shallow Lakes Management Plan (2014), or for individual lakes where the information exists (for the years indicated)

Lake name	Ownership	Current Water Quality (including trophic state⁴⁰)	Vulnerability	Restoration Potential	Existing Information
		(TLI 4.7)	(identified in 8A of WRPS)		Farm environment plans prepared for farms in catchment already (NZLT, funded by WRA) Modelling underway to assess nutrient reduction scenarios (for Waikato River Restoration Strategy)
Lake Rotoroa	HCC	Peat lake with 2 nd highest WQ. Evidence of water quality improvement (1990-2000) which has since stabilised (TLI 4.6)	Water quality improved 1990-2000 and was stable between 2000-2010	Moderate (stormwater)	High priority for HCC. Strong focus on contact recreation
Lake Rotopiko E	DOC	Moderate WQ, submerged plants (TLI 5.0)	High (identified in 8A of WRPS)	High	Substantial restoration undertaken by DOC, WRC, Waipā DC Farm environment plans prepared for farms in catchment already
Lake Rotopiko N	DOC	Moderate WQ, submerged plants (TLI 5.0)	High (identified in 8A of WRPS)	High	Substantial restoration undertaken by DOC, WRC, Waipā DC Farm environment plans prepared for farms in catchment already
Lake Rotopiko S	DOC	Moderate WQ, submerged plants (TLI 5.2)	High (identified in 8A of WRPS)	High	Substantial restoration undertaken by DOC, WRC, Waipā DC Farm environment plans prepared for farms in catchment already
Lake Maratoto	Private	Moderate WQ although TN in D band (dystrophic) (TLI 5.2)	High (identified in 8A of WRPS)	Moderate-High (water levels)	Substantial restoration undertaken here - water levels, riparian restoration, wetland creation (funded by WCEET, WRA, Waipā DC)

Lake name	Ownership	Current Water Quality (including trophic state⁴⁰)	Vulnerability	Restoration Potential	Existing Information
					Dystrophic so don't expect submerged plants
Lake Mangakaware	Waipā DC	Moderate-Degraded water quality (TLI 6.3)	Low vulnerability but high restoration potential	V high	Lost submerged plants in last 10 years. Substantial restoration. Undertaken (including riparian retirement and sediment traps) Farm environment plans prepared for farms in catchment already
Lake Kainui	WDC	Moderate - Degraded WQ (TLI 5.7 in 2012/13)	Low vulnerability but moderate restoration potential	Moderate	Plants collapsed in last 10 years in Lake Kainui and WDC has undertaken projects to improve riparian buffer and create sediment traps.
Volcanic					
Lake Ngahewa	TALT bed / DOC land adjoining	Only just in D band for TN (TLI 6.0 in 2009/10)	High (identified in s8A of WRPS)	High (needs catchment controls) and has good depth.	Riparian restoration underway. WRA funded lake restoration plan & implementation already. Very recently lost submerged plants so high chance of re-establishment from seedbanks.
Riverine					
Lake Waahi	WDC	Highest water quality of the riverine lakes with (TLI 5.8)	Low-Moderate	Low-Moderate	Considerable work already undertaken - all fenced, significant wetland revegetation (Waikato Tainui lands) and riparian planting initiatives. Modelling underway to assess nutrient reduction scenarios (for Waikato River Restoration Strategy)

21. Appendix I: Amended Lake Attributes

The information below is summarised for individual lakes and shows the available information for nutrient concentrations – augmenting the RC long term data with point data available for the lakes. This shows that there are some peat and dune lakes that are still in comparatively good condition with some attributes better than D band already. Note that this correlates with the high condition/high vulnerability lakes identified in section 8A of the Waikato Regional Policy Statement.

Table A - National Objectives Framework lake attributes to be applied to lakes in the Waikato and Waipā Catchments as per Tables B and C

Ecosystem Health*	Lake FMUs band applies to:	NOF Attributes (Numeric State) [Applies to Dune, Riverine, Volcanic and Riverine Lakes]						
		Annual median Chlorophyll a (mg/m ³)	Annual maximum Chlorophyll a (mg/m ³)	Annual Median Total Nitrogen (mg/m ³)	Annual Median Total Phosphorus (mg/m ³)	Annual 95th E. coli (E.coli/100 ml)	80th cyano bacteria (biovolume mm ³ /L)	Clarity (m)
A	Refer to Table B for 80 year targets for the TN, TP, Chla and Clarity attributes for 28 Lake FMUs (based on data presented to CSG)	≤ 2	≤ 10	≤ 160-300	≤ 10	<260	0.5	Tbd
B		>2 and ≤ 5	>10 and ≤ 25	≥ 160-500	>10 and ≤ 20	>260 and ≤ 540	na	Tbd
C		>5 and ≤ 12	>25 and ≤ 60	≤ 350-800	>20 and ≤ 50	>540	0.5 ≤ 1.8	>1
Bottom Line		12	60	>750-800	50		1.8	1

Table B - 80-year targets for lake attributes for lakes. Applied to all lakes where data provided to Collaborative Stakeholder Group (Technical Leaders Group memo to Collaborative Stakeholder Group dated 17/9/2015)

Lake FMU	Lake	Current Lake Water Quality State (2010-2014, from TLG memo to CSG dated 17/9/2015)				80-year target			
		Annual median Chlorophyll a (mg/m ³)	Annual Median Total Nitrogen (mg/m ³)	Annual Median Total Phosphorus (mg/m ³)	Clarity (m)	Annual median Chlorophyll a (mg/m ³)	Annual Median Total Nitrogen (mg/m ³)	Annual Median Total Phosphorus (mg/m ³)	Clarity (m)
Dune	Otamatearoa	2	471	10		A	A	A	A
Dune	Puketi	2	493	14		A	A	A	A
Peat	Rotomānuka	11	1073	18	1.0	B	B/C	A	A/B
Peat	Rotoroa	8	809	20	1.2	B	B	A	A/B
Peat	Serpentine E	9	1496	22	1.3	B	B/C	B	A/B
Peat	Maratoto	5	1777	25	0.4	A	C	B	dystrophic
Peat	Serpentine N	13	1191	30	1.1	B	B/C	B	A/B
Peat	Serpentine S	12	934	31	0.9	B	B	B	A/B
Peat	Rotokotuku	31	1107	65		D	B/C	C	dystrophic
Peat	Kainui	28	1576	75	0.6	C	C	C	C/D
Peat	Areare	25	1747	82	0.6	C	C	D	C/D
Peat	Horseshoe	54	1497	108		D	C	D	C/D
Peat	Milicich	138	2361	113		D	D	D	C/D
Peat	Ngaroto	70	2287	119	0.4	D	D	D	C/D
Peat	Mangakaware	46	1675	186	0.8	D	C	D	>C
Peat	Whakatangi	5	3240	187		?	D	D	
Peat	Tunawhakaheke	19	1665	260		C	C	D	

Lake FMU	Lake	Current Lake Water Quality State (2010-2014, from TLG memo to CSG dated 17/9/2015)				80-year target			
		Annual median Chlorophyll a (mg/m ³)	Annual Median Total Nitrogen (mg/m ³)	Annual Median Total Phosphorus (mg/m ³)	Clarity (m)	Annual median Chlorophyll a (mg/m ³)	Annual Median Total Nitrogen (mg/m ³)	Annual Median Total Phosphorus (mg/m ³)	Clarity (m)
Peat	Mangahia	59	3102	640	0.2	D	D	D	D
Riverine	Waahi	23	1061	66	0.2	C	B/C	C	D
Riverine	Te Kapa	14	1709	82		C	C	D	D
Riverine	Hakanoa	38	1482	99	0.3	D	C	D	D
Riverine	Ohinewai	45	1900	111	0.3	D	C	D	>C
Riverine	Whangape	57	1860	119	0.2	D	D	D	D
Riverine	Okowaho	21	1822	124		C	D	D	
Riverine	Waikare	94	2502	145	0.2	D	D	D	D
Riverine	Penewaka	35	4170	535		D	D	D	
Volcanic	Tutaeinanga	30	1522	121		C	C	D	
Volcanic	Ngahewa	41	843	155		D	B	D	>C

The 80 year target attributes in Table B have been determined on the basis of the following:

Target	Current TN	Current TP	Current Chla	Clarity - Current clarity or knowledge of plants
A	<800	<20	<5	Clarity already >1m and with submerged plants and/or plant restoration an existing goal
B	800-1000	20-50	5-12	
C	1000-1750	50-75	12-30	Known to have supported plants recently (i.e. have seedbanks) and existing clarity 0.5m - 1m
D	>1750	>75	>30	<0.5m

Table C - 80-year interim targets for lake attributes for lakes where data was unavailable or not reported to Collaborative Stakeholder Group.

Lake FMU type	Current Lake Water Quality State based on information from monitored lakes (2010-2014, from TLG memo to CSG dated 17/9/2015)				80-year target (interim)			
	25th percentile of Annual median Chlorophyll a (mg/m ³)	25th percentile of Annual Median Total Nitrogen (mg/m ³)	25th percentile of Annual Median Total Phosphorus (mg/m ³)	25th percentile of Clarity (m)	Annual median Chlorophyll a (mg/m ³)	Annual Median Total Nitrogen (mg/m ³)	Annual Median Total Phosphorus (mg/m ³)	Clarity (m)
Dune	2	477	11	-	B or maintain if better	B or maintain if better	B or maintain if better	B or maintain if better
Riverine	23	1652	95	-	D or maintain if better	D or maintain if better	D or maintain if better	D or maintain if better
Peat	11	1170	29	0.5	C or maintain if better	C or maintain if better	C or maintain if better	C or maintain if better
Volcanic	33	1013	130	-	D or maintain if better	D or maintain if better	D or maintain if better	D or maintain if better

22. Appendix J: Existing lakes management and planning

The following summary table illustrates the level of planning already in place for lakes and the number of properties within each catchment.

	<5 properties in catchment	5-20 properties in catchment	20-100 properties in catchment	>100 properties in catchment
Lakes with farm plans already prepared for dairy farms within their catchments	Rotopiko (NSE) Tunawhakaheke	Rotomānuka (N&S) Mangakaware Kaituna Ngaroto		
Lakes with management/ revegetation/ restoration plan in place or underway (for the lake)	Penewaka, Maratoto, Rotopiko (NSE) Milicich Hendersons Pond Mangahia Koromatua Ohinewai Rotongaroiti Komakorau Puketi Rotopotaka Rotoiti Otamatearoa Tunawhakaheke Rotongata Rotokotuku	Rotomānuka (N&S) Ngahewa Okowaho Rotongaro Ngapouri Kaituna Tautaeinanga Ngarotoiti Ngaroto Cameron Kainui Ruatuna Mangakaware Areare Hotoananga	Kimihia Hakanoa	Whangape Waikare Waahi Rotoroa Te Koutu Rotokauri Rotokaeo Te Otamanui Lagoon

	Whakatangi Posa	Pikopiko Parkinson Waiwhakareke		
Lakes with no management plan	Opuatia Te Kapa Waiwhata Pataka	Kopuera		
Some form of catchment plan	Rotopiko NSE Milicich Henderson's pond Tunawhakaheke	Rotomānuka N&S Ngahewa Ngapouri Tutaeinanga Ngaroto Ngaroroiti Ruatuna Areare Mangakaware	Kimihia	Whangape Waikare
Urban/partly urban catchment		Waiwhakareke Cameron	Hakanoa	Te Koutu Rotoroa Rotokauri Rotokaeo
No recent management	Te Kapa Waiwhata Pataka Posa Whakatangi	Kopuera Pikopiko		
Uncertainty about catchment management requirement	Opuatia? Rotokawau?	Waiwhakareke?		

