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**Submission on “Our Water Future Tō tātou wai ahu ake nei – a discussion document”**

Thank you for the opportunity for Auckland Regional Public Health Service (ARPHS) to provide a submission on “Our Water Future Tō tātou wai ahu ake nei – a discussion document”.

The following submission represents the views of ARPHS and does not necessarily reflect the views of the three District Health Boards it serves. Please refer to Appendix 1 for more information on ARPHS.

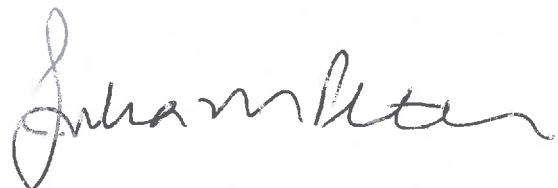
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Yours sincerely



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## Overview and recommendations

1. Thank you for the opportunity for Auckland Regional Public Health Service (ARPHS) to provide a submission on Auckland Council's "Our Water Future Tō tātou wai ahu ake nei – a discussion document".
2. ARPHS has several roles and areas of activity and interest related to the Our Water Future:
  - ARPHS' Drinking Water Assessors are the auditors for networked drinking water suppliers (primarily Watercare Services), monitoring compliance with the Health Act 1956 and Drinking Water Standards for New Zealand (DWSNZ). This includes assessment of Water Safety Plans (WSP) developed by drinking water suppliers, providing advice and information on drinking water supplies, investigating public health problems arising from drinking water, responding to transgressions of the DWSNZ, maintaining the Auckland components of ESR's Drinking Water Online (DWO) database, and promoting public knowledge on drinking water safety and quality. Health Protection Officers and Medical Officers of Health at ARPHS are the regulators for drinking water supplies in the Auckland region;
  - ARPHS is a partner in Safeswim, Auckland Council's programme for monitoring and reporting on water quality at Auckland's bathing beaches, along with Surf Lifesaving and Watercare. There have been important flow on effects from the Safeswim programme, including recognition by the public and the council of the state of recreational fresh and coastal water, the contamination of streams and storm water systems, and the need for substantial investment in rectifying problems. The gains resulting directly and indirectly from the programme, such as improvements at Weymouth, are welcome;
  - ARPHS, Watercare and council's Healthy Waters and the Research and Evaluation Unit (RIMU) have regular liaison around natural water quality issues;
  - ARPHS has an advisory role in responses to incidents such as wastewater overflows, and has been involved in issues of groundwater and coastal sediment contamination from persistent pollutants;
  - ARPHS receives notifications from health practitioners and laboratories of cases of infectious diseases which can be caused by exposure to contaminated water. Unfortunately this is a relatively insensitive measure of the impact of water contamination on human health, but can indicate the need for further investigation.
3. ARPHS fully supports Auckland Council's move towards the development of an integrated framework for water decisions. Having this framework will help Council to work through potentially controversial decisions about water management that often result from competing stakeholder demands for Auckland's water resources and the variety of values that each stakeholder applies to this particular resource.
4. ARPHS' main recommendations are as follows:
  - Place equal weight on ecology, human, cultural, historical, social and wellbeing values versus technical and commercial values;
  - Support for the implementation of the Te Mana o te Wai concept;
  - Ensure any future water strategy aligns with existing plans managing Auckland's growth, and provides for a compact urban form as envisaged in the Auckland Plan and Unitary Plan;

- Focus on activities that mitigate the effects of climate change, such as incorporating water sensitive design principles in urban planning processes;
  - ARPHS recognises Council's funding constraints and the need to prioritise initiatives that make the biggest difference;
  - Ensure the framework moves beyond a theoretical concept, and is practically applied to help determine which water infrastructure, initiatives, and policies are implemented, operationalised and funded.
5. The remainder of this submission provides an overview of the public health's perspective on water issues in Auckland and thereafter addresses the consultation questions raised in the discussion document, discussing the above recommendations further.

### Auckland Regional Public Health's Perspective on Water Issues in Auckland

6. Public health concerns about Auckland's water and its future are broadly similar to those of Auckland Council. ARPHS supports Auckland Council and its Council Controlled Organisations (CCOs) in developing and improving the understanding of the drivers and pressures affecting water resources, use and management of water in the region, and monitoring of the state of surface, ground and coastal waters in order to improve decision making, funding and actions for the region's water systems.
7. The DPSEEA framework (Drivers, Pressures, States, Exposures, Effects, and Actions) is a useful tool for identifying environmental health risks and places where action can be taken.
8. The main *drivers* affecting water quality and availability – including population increase, urbanisation, climate change and economic expansion – are also factors affecting Auckland population's health, the healthiness of our urban environment, and the city's ability to make core services available to all. These are examined and described in the Auckland Plan.
9. The *pressures* on water quality and availability of water in the Auckland region include the demand for water coming from domestic, commercial, industrial and farming activities; urban expansion and consequent run-off and increased production of contaminated waste water.
10. Assessing the *state* of ground water, surface water and coastal water is an important role for Auckland Council, the National Institute of Water and Atmospheric Research (NIWA), the Ministry for the Environment (MfE) and other agencies. ARPHS echoes their concerns about the long term degradation of water (especially surface and coastal) in the region outlined in the discussion document and in reports by both RIMU and MfE.
11. The Safeswim programme has been a very good illustration of the ways of combining environmental monitoring and predictive modelling to provide useful and timely information for the public. ARPHS notes the concerns outlined by the Environmental Defence Society<sup>1</sup> about the state of monitoring and enforcement of resource consent conditions across the country, and implementation of environmental standards in regional plans.

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<sup>1</sup> Brown M, *Last Line of Defence*, Environmental Defence Society, [www.eds.org.nz](http://www.eds.org.nz)

## Drinking Water: Source protection, sources, treatment, distribution

12. As the auditor and regulator for networked drinking water supplies and water carriers, ARPHS has particular interest in:

- *Ensuring future supplies:* As noted in the discussion document and Watercare's strategy documents, pressure is expected to increase on water sources for Auckland. The Waikato River is the preferred identified source for the medium term; however ARPHS has concerns about source quality given the increased pressure on the Waikato catchment from population and agriculture. Ground water sources are constrained, including in Franklin where there could be pressures for municipal and horticultural use. There will likely be a need for demand management by industrial and domestic users over the timespan of the Auckland Plan, and the region may need to consider re-use of treated waste water for some non-potable uses which raises a wide range of issues, including the need for separate distribution infrastructure;
- *Ensuring the effectiveness and sufficiency of networked water supplies:* Watercare provides consistently high quality water. The organisation's scale, expertise and financial resources mean that it is able to address water quality and supply issues. There was a noticeable improvement in the performance of the drinking water system following the formation of Watercare at the time of the council amalgamation, especially in addressing supply and quality issues in the smaller centres such as Pukekohe and Waiuku, which the previous councils were not able to fix because of the relatively low priority put on water infrastructure, along with financial and engineering constraints. ARPHS recommended forming a small number of regional municipal water organisations across the country in its submissions to the Havelock North enquiry to make use of financial capacity and engineering capability at scale. ARPHS is also pleased to see Auckland Council's Healthy Waters department making progress on upgrading the small supplies it operates, such as those in regional parks and community facilities;
- *Improving small supplies and self-supplies:* Current indications from the Ministry of Health and Department of Internal Affairs are that all drinking water supplies other than for self-supplies for single dwellings will need to meet the DWSNZ. This will have implications for supply owners and operators in the region;
- *Improving the distribution network:* This is a continual work in progress, with infrastructure upgrades needed over time across the region, and demand for infrastructure expansion, especially for green-field sites. Loss in the distribution system through leakage is an on-going issue, which should get further attention as supply pressures increase. ARPHS has consistently supported compact urban development including prioritising brown-fields re-development over urban expansion, in part because of the exponentially high costs of infrastructure as relatively low density suburban areas expand.

## Waste water

13. The anticipated increase of Auckland's population, water use, and urban area will pose challenges for the waste water collection and treatment system. ARPHS notes Council's current plans to more than treble the capacity of the Army Bay Wastewater Treatment Plant (WWTP) to

cope with projected population increases over the next 35 years. Repair and replacement of the existing collection network and upgrades at WWTPs will need to be planned and adequately funded.

14. ARPHS is supporting Auckland Council's programme for improving the performance of the more than 40,000 on-site wastewater treatment systems in the region. ARPHS sees this programme as a positive development, especially for improving surface water quality, including for the West Coast beach communities and Waiheke Island, where local treatment systems will be required. ARPHS does not support the expansion of on-site systems in the urban area.

### Storm water

15. ARPHS supports the programme for improving storm water management, including separation of the combined waste water and storm water systems; identification of sources of contamination; network improvements; and the Council's targeted rate.

### Resilience

16. ARPHS supports the general direction indicated in the discussion document of improving system resilience, including for storm events and climate-related changes.

## Consultation questions

*Do these values match what you value about water? Please tell us why, and if there is anything else you value about water?*

17. ARPHS generally supports the proposed values being: ecosystems, water use, culture, recreation and amenity and resilience. These values closely align with the core public health aims of secure and safe drinking water provision for Auckland's population, and minimising and preventing the risk of disease associated with the public use of recreational waters (this includes food gathering regulated by the Ministry of Primary Industries).
18. ARPHS acknowledges that the values use inclusive language like 'we' and 'our' but considers there could be stronger emphasis on how important water is for every one of us in our daily lives. ARPHS notes that the *Value of Water campaign*<sup>2</sup> in the United States seeks to inspire everyone about how water is essential, invaluable and in need of investment, identifying the following water values:
- Water and you: Water is life. It nourishes us. It cleans us and sustains us. Put simply, water is you;
  - Water and the environment: 70 percent of the Earth is water. From seas to lakes, to rivers and creeks, water is everywhere. Valuing water means valuing our future;
  - Water and economy: Water is the lifeblood of our economy. We rely on it for manufacturing, energy production, to transport materials across the globe, and more;

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<sup>2</sup> Value of Water campaign from: <http://thevalueofwater.org/>

- Water and community: Water connects us. Water is a ride on a boat. Water is a sprinkler, making children laugh with joy. Water brings families and friends together in countless ways.

19. Apart from identifying the values, thought should also be given as to how these values are being applied beyond the strategy on a day-to-day basis while making decisions on water issues. ARPHS suggests that equal weight should be placed on values representing the ecology, human, cultural, historical, social and wellbeing aspects of water versus the values encompassing the technical and commercial elements of water.

*Recommendation:* While working with the proposed values, equal weight should be placed on values representing the ecology, human, cultural, historical, and social and wellbeing aspects of water versus the values encompassing the technical and commercial elements of water.

*How concerned are you about the 'big issues'? Please tell us why and what you think we can do now to anticipate and adapt to the changes in our water future?*

20. ARPHS considers one of the biggest challenges that Auckland is facing is rapid population growth. Taking into account a medium growth scenario, Auckland's population is projected to grow by 720,000 people by 2048.<sup>3</sup> This population growth comes with all types of challenges that will ultimately place additional pressure on Auckland's natural water resources and water infrastructure. ARPHS notes that Watercare intends to spend approximately \$2.25 billion over a ten year period to provide capacity for growth, including building an additional treatment plant, process upgrades, construction of new reservoirs, pump stations, and pipelines.<sup>4</sup>
21. Over the last couple of years Auckland Council has already undertaken several pieces of work to manage and plan for Auckland's expected growth.<sup>5,6</sup> The Auckland Plan envisages Auckland as a compact city, a concept that ARPHS strongly supports. Compact cities, if planned in an integrated (multisector) way that prioritises health, sustainability and liveability outcomes, can create healthier and more sustainable cities.<sup>7</sup> With regards to water specifically, a compact city will also help to keep infrastructure related costs down. ARPHS recognises the need for the water strategy to align with existing plans that manage Auckland's growth.
22. Another 'big issue', as highlighted in the discussion document, is the need to adapt to a changing water future. This includes preparing for the effects of climate change. Water supply, treatment and distribution can all be affected by climate change through droughts, storm events, supply issues and pressures from population growth.

<sup>3</sup> Auckland Plan 2050 Evidence report: Demographic trends for Auckland: Data sources and findings June 2018 Sourced from <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/auckland-plan/about-the-auckland-plan/Evidence%20reports%20documents/evidence-report-demographics.pdf>

<sup>4</sup> Watercare Services Limited. (2016). *How Watercare plans to stay ahead of Auckland's population growth* [Press release]. Retrieved from <https://www.watercare.co.nz/About-us/News-media/How-Watercare-plans-to-stay-ahead-of-Auckland-s-po>

<sup>5</sup> Auckland Council. (2017). *Auckland Future Urban Land Supply Strategy*. July 2017

<sup>6</sup> Auckland Council. (2018). *Auckland Plan 2050 – Our development strategy*. June 2018

<sup>7</sup> Billie Giles-Corti, Anne Vernez-Moudon, Rodrigo Reis, Gavin Turrell, Andrew L Dannenberg, Hannah Badland, Sarah Foster, Melanie Lowe, James F Sallis, Mark Stevenson, Neville Owen. City planning and population health: a global challenge. *The Lancet*, Volume 388, Issue 10062, 10–16 December 2016, Pages 2912-2924

23. In addition, extreme rainfall has been associated with increased levels of norovirus, giardia and cryptosporidium in drinking water supplies.<sup>8</sup> Waste water, storm water systems and coastal water environments are also vulnerable to climate change. For example, growth of the marine bacteria *Vibrio* increases as water temperatures rise.<sup>9</sup> From a public health perspective the changing water future and the impacts of climate change are therefore seen as another important 'big issue'.

*Recommendation:* Ensure any future water strategy aligns with existing plans managing Auckland's growth to create the compact city as envisaged in the Auckland Plan. Focus on activities that mitigate the effects of climate change, such as incorporating water sensitive design principles in urban planning processes.

*What actions should we prioritise as we adapt to a changing water future?*

24. Although the Auckland municipal system has proven to be safe, reliable and resilient, in certain circumstances (such as adverse weather events, accidental or deliberate chemical contamination and damage to existing water infrastructure) the level of contamination can exceed the ability of water treatment plants to neutralise the contamination. Having contingency plans in place for such events, together with planned exercises to practice responding to various scenarios, is strongly encouraged.
25. Furthermore, improvements and changes to treatment technologies could be another aspect to consider in light of future water challenges for the Auckland region, as new technologies will provide opportunities in a changing water future.
26. The discussion document acknowledges that the quality of the rural water supply is less clear than that of the urbanised parts of the Auckland region. ARPHS would like to encourage Auckland Council to develop a specific action plan to address the water quality issues of rural users that source their own water supply from rain tanks, surface water takes, or groundwater. Collating that information in one place is suggested as a starting point.
27. From the public health point of view it is important to note that water supplies that are not properly treated can contain organisms that cause serious illnesses. These include giardia, cryptosporidium, salmonella, campylobacter and a form of *E. coli*.
28. Moreover, the supply of safe water for rural users continues to be subject to the provisions of the Building Act and Health Act. These pieces of legislation are within Council's regulatory framework. Council therefore has an obligation to ensure that potable water supplies of rural users meet the Drinking Water Standards for New Zealand. The water strategy could be an opportunity to further action this aspect and will complement the equivalent work being

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<sup>8</sup> Royal Society of New Zealand. (2017). Human Health Impacts of Climate Change for New Zealand. Available from: <https://royalsociety.org.nz/assets/documents/Report-Human-Health-Impacts-of-Climate-Change-for-New-Zealand-Oct-2017.pdf>

<sup>9</sup> Royal Society of New Zealand. (2017). Human Health Impacts of Climate Change for New Zealand. Available from: <https://royalsociety.org.nz/assets/documents/Report-Human-Health-Impacts-of-Climate-Change-for-New-Zealand-Oct-2017.pdf>

conducted by Council to establish a management programme for on-site effluent disposal installations.

*Recommendation:* Ensure contingency plans are in place and are being tested on a regular basis to ensure water infrastructure resilience during various scenarios. Consider how new technologies can provide opportunities in a changing water future. Take specific action towards improving water quality for rural users.

*Do you have any feedback on the proposed framework, or is there anything else you think should be included?*

29. ARPHS strongly supports an integrated approach to water management and is therefore pleased to see Council's efforts to incorporate the Te Mana o te Wai concept, the integrated and holistic wellbeing of a freshwater body.
30. Looking at water issues from a holistic perspective will require decision-making processes that consider any activity's cumulative effect on the receiving environment. To support this approach, Auckland Council needs to be confident that it has a fit-for-purpose water quality monitoring programme; one that is comprehensive, frequent, measuring the right parameters in the right locations and transparent.
31. ARPHS understands that Auckland Council's freshwater state of the environment monitoring programme assesses the quality and quantity of freshwater and the health of freshwater ecosystems at numerous river, lake and groundwater locations throughout Auckland. In addition, Safeswim's marine water quality forecasting for Auckland's beaches is helping to build a picture of Auckland's marine water quality. A predictive quality programme for freshwater in the style of Safeswim is encouraged.
32. ARPHS wonders whether there are opportunities to further enhance existing monitoring activities through utilising monitoring data collected through other mechanisms, such as resource consent activities, or water quality and quantity monitoring undertaken by community groups. ARPHS considers any future Auckland Water Strategy provides an opportunity to consolidate for all stakeholders a better understanding of the current measures (including specific Council funded programmes, community/business based initiatives and the regulatory framework that influences everyday decisions with regards to water management) applied to manage Auckland's water resources.
33. ARPHS recognises Council's funding constraints and the need to prioritise initiatives that make the biggest difference. However, Council should ensure that this water strategy moves beyond a theoretical concept, and is practically applied to help determine which water infrastructure, initiatives, and policies are implemented, operationalised and funded into the future.

*Recommendation:* Implement the Te Mana o te Wai concept and work with partners, stakeholders as well as central government, towards an integrated water quality monitoring programme. Ensure that the water strategy moves beyond a theoretical concept and is implemented, operationalised and appropriately funded into the future.



## Conclusion

34. Thank you for considering our submission on Auckland Council's consultation on "Our Water Future Tō tātou wai ahu ake nei – a discussion document".

## Appendix 1: Auckland Regional Public Health Service

Auckland Regional Public Health Service (ARPHS) provides public health services for the three district health boards (DHBs) in the Auckland region (Counties Manukau Health, Auckland and Waitemata District Health Boards).

ARPHS has a statutory obligation under the New Zealand Public Health and Disability Act 2000 to improve, promote and protect the health of people and communities in the Auckland region. The Medical Officer of Health has an enforcement and regulatory role under the Health Act 1956 and other legislative designations to protect the health of the community.

ARPHS' primary role is to improve population health. It actively seeks to influence any initiatives or proposals that may affect population health in the Auckland region to maximise their positive impact and minimise possible negative effects.

The Auckland region faces a number of public health challenges through changing demographics, increasingly diverse communities, increasing incidence of lifestyle-related health conditions such as obesity and type 2 diabetes, infrastructure requirements, the balancing of transport needs, and the reconciliation of urban design and urban intensification issues.